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1st Quarter Farm Cash Receipts Top Year-Ago Figures

Higher Production Cost Tends to Offset Gains, USDA Economists Note

WASHINGTON — Cash receipts from farm marketings in the first quarter of this year were slightly larger than in the same period of 1958, with an increased volume of marketings offsetting somewhat lower prices, it was reported in "The Farm Income Situation," published by the Agricultural Marketing Service, U.S. Department of Agriculture.

Despite a substantial increase in production expenses, the report continued, the seasonally adjusted annual rate of realized net income in the first quarter was about the same as in the first quarter last year, though somewhat lower than the average for the year.

Prices and net incomes realized by farmers this year are likely to be somewhat under 1958 when they rose to the highest levels in five years, AMS predicted. Prices received by farmers have held unusually steady

(Turn to FARM INCOME, page 20)

TVA to Extend Test-Demonstration Program into Maine

KNOXVILLE—Farmers in Maine will, for the first time, participate in the test-demonstration farm program which the Tennessee Valley Authority, in cooperation with the agricultural extension services, is carrying on in 30 states, TVA has announced. Test-demonstration work is being initiated on 18 farms in York County in southwestern Maine. The farmers have agreed to carry out a farming program outlined by the extension service of the University of Maine at Orono, using TVA experimental fertilizers which they obtain for a limited period at reduced cost.

The fertilizers used in the program this year include concentrated superphosphate (0-54-0), diammonium phosphate (20-52-0), ammonium phosphate nitrate (30-10-0), and ammonium nitrate (33.5-0-0).

Pesticide Act Amendment Proposed by Congressman

WASHINGTON—A new bill, H.R. 6436, a proposed amendment to the Federal Insecticide, Fungicide and Rodenticide Act of 1947 was introduced in the House of Representatives on April 15 by Harold D. Cooley (D., N.C.), chairman of the House Committee on Agriculture.

The bill is designed to extend coverage of the Act to include defoliants, desiccants, plant regulators and nematocides, thus providing a means for uniform regulation of these products at the federal level.

Full details of the bill will be carried in Croplife next week.

Water Prospects In Western U.S. Vary, Says USDA

WASHINGTON—Western water supplies forecast in the U.S. Department of Agriculture's 1959 water supply outlook are "poor in the South and Southwest" and "fair to good in the North."

This prospect contrasts with last year's generally abundant water supplies in the western states, and recalls the earlier 7-year trend of adequate supply in the Pacific Northwest to shortages in the Southwest.

Snow survey supervisors of USDA's Soil Conservation Service said, however, that carryover storage from relatively high 1957 and 1958 runoff, particularly in larger reservoirs, will provide supplemental and late-season water where the snowpack is normal, and tend to alleviate a disastrous shortage during the 1959 season where the snowpack is low.

With average or less snow accumulated in the mountains at the April 1 measuring time, little probability is seen of damaging high streamflows resulting from snow melt.

Commenting on the irrigation water outlook, D. A. Williams, Soil Conservation Service administrator, said, "Farmers and ranchers in the areas faced with deficient water supplies have been reminded that they may work through their local soil conservation districts in obtaining the help of service technicians in planning their cropping and grazing pattern to fit their soil and available water supply."

The forecast for the coming season's irrigation and general water supplies covers 15 states and British Columbia. It represents coordinated information on snow survey measurements made by the Soil Conservation

(Turn to WATER, page 20)

Groups Debate Whether To License Chemical Salesmen in California

SAN FRANCISCO—The California State Department of Agriculture has formed an industry-wide committee to study a proposal to require the licensing of chemical salesmen in the state.

Favoring the proposition is the California Agricultural Aircraft Assn., Inc. Opposing the proposition are Western Agricultural Chemicals Assn., the California Fertilizer Assn. and other agricultural groups.

There is a "real problem," some of the members of the latter group said, but they thought licensing was not the solution.

Despite its support of the measure, the CAAA decided not to sponsor legislation to this effect during the current legislative sessions. Before the next sessions, however, all organizations on the new committee would put forth an all-out effort to educate farmers, chemical companies, salesmen and the general public to try to eliminate the problem without legislation.

Committee members were asked to record problems, and to forward these to the Bureau of Chemistry at Sacramento in order to determine the scope of the issue.

A representative of the WACA said at hearings that "we are unaware of even one instance of alleged incorrect pesticidal advice charged to personnel employed by a member of the WACA, and we hold that the pesticide manufacturing industry should not be penalized by regulatory legislation induced by misdemeanors committed by personnel in the employ of other trade groups."

The committee is composed of representatives of the CAAA, WACA, Agricultural Council of California, California Farm Bureau Federation, National Agricultural Chemicals Assn., State Association of County Agricultural Commissioners, the University of California, State Department of Agriculture and California Fertilizer Assn.

Chemical Fertilizer Co. Purchased by Collier

LOS ANGELES—Collier Carbon & Chemical Corp. announced that it has acquired all outstanding stock of Chemical Fertilizer Co., Modesto, Cal.

Although Collier controlled, Chemical Fertilizer Co. will retain its corporate identity and will continue marketing its fertilizer products under the brand names of "Producers Brand" and "Chem-pells." It will also package some of Collier's Brea Brand fertilizers, a Collier spokesman said.

Chemical Fertilizer Co.'s liquid mixes, single and triple phosphates, and dry mixes, manufactured at its Klaus and Riverbank plants, are marketed through outlets at Arbuckle, Butte City, Clarksburg and Klaus, Cal.

Promising Future in Forest Fertilization Seen by NPFI

BATON ROUGE, LA.—"Potential evidence is strong that further research on fertilizing Southern pine will bear fruit."

Those were the words of Dr. L. C. Walker, chief forester for the National Plant Food Institute, who spoke at a symposium on forest soils at Louisiana State University here recently.

Dr. Walker went on to say, however, "experimental evidence is insufficient for recommending fertilizer practices in southern forestry. What we need first, is a tabulation giving growth responses to be expected for each species in stands of various density and on many sites, when fertilized at specified ages, and at specified rates of application."

The chief forester spoke on "Fertilizing Southern Pines—A Roundup of Observations and Concepts." He based his comments on an accumulation of information obtained from contacts with more than 300 practicing and research foresters who represent some 100 industrial, state, federal and educational organizations in the South and Southwest.

Dr. Walker cited a number of investigations which need to be considered before the growth and economic potentials of forest fertilization are to be realized. They include the following studies:

(1) To determine if genetic inheritance of strains of each species is an important factor in efficient use of available nutrients for growth;

(2) To decide if herbicides can be effectively used in combination with fertilizer for weed control and, thereby, stimulate growth of young plantations;

(3) To learn if fertilization in poorly-drained soils, usually requiring drainage, can partly overcome

(Turn to FORESTS, page 20)

Rose Club Defends Spraying Program

MEMPHIS — A Memphis garden organization has come to the defense of the U.S. Department of Agriculture's spray program to control the white fringed beetle. A special investigating committee of the Memphis Rose Society reported:

"Members of this committee have used dieldrin in their yards to eradicate grubs that are common to this area; none has found dead birds or pets from its use. This committee feels that unless the program is completed, our crops and pasture lands may become worthless. And if Memphis is sprayed with dieldrin, a section at a time, no great harm can come to anyone."

The three year old spray program has been under heavy fire for the past several months. The West Tennessee Sportsmen's Assn. and several Memphis garden clubs have been trying to halt the program claiming that dieldrin is harmful to wildlife.

The department of agriculture's local pest control division plans to resume spraying next month when another shipment of dieldrin is expected.

Thomas G. Runion

SALESMAN—Thomas G. Runion has been employed by Nitrogen Division, Allied Chemical Corp. of New York, as an agriculturel sales representative in Illinois. Mr. Runion joined Nitrogen Division upon graduation from Purdue University with a B.S. degree in agriculture. While in college, he worked on a summer project for Purdue's department of agricultural economics.

12 Apply for Spraying Licenses at Weed Meetings

SALEM, ORE.—Twelve new applicants, including 10 ground sprayers, took examinations for a state license to apply agricultural herbicides at the recent series of weed meetings in western Oregon.

A record attendance of 426 sprayers attended the eight sessions conducted jointly by the State Department of Agriculture, State Highway Department and the extension service.

Mark H. Astrup, landscape engineer with the Highway Department, told the group that brush and weed control along highway right-of-ways this year is geared to a fast killdown to preserve roadside beauty for Centennial visitors. Without this quick and selective killing the spray operations would leave unsightly brown foliage in some areas.

Rex Warren of the extension service told sprayers the importance of knowing their materials, calibration of their equipment and of following directions for use of a given material.

Ray Kelso, herbicide control supervisor with the State Department of Agriculture, reviewed the spray damage reported last year and said that 30 claims had been made against 14 operators, six of whom were unlicensed. Mr. Kelso discussed each claim to show what the operator could and should have done to avoid damage.

The weed sessions were held at Gresham, Hillsboro, Tillamook, Salem, Eugene, Roseburg, Medford and Klamath Falls. Highest attendance at any meeting was 75, at Eugene. The 1959 attendance represented 20% increase over the similar series in western Oregon two years ago.

Calspray Announces Three New Sales Appointments

RICHMOND, CAL. — William R. Dunham, James L. Beaver and William J. Zawicki have been named new sales representatives for the California Spray-Chemical Corp., announced Dr. R. T. Wallace, district manager for the Northeast Atlantic area.

Mr. Dunham will work out of the Calspray office in Roanoke, Va., covering the central and Piedmont areas of Virginia.

Mr. Beaver will cover parts of Virginia and West Virginia.

Mr. Zawicki will work out of the branch office in Carlisle, Pa.

Turfgrass Conferees Hear of Weed, Insect And Disease Controls

TIFTON, GA.—The latest developments in weed control and disease and insect control were among the discussions at the 13th Annual Southeastern Turfgrass Conference held April 6-8 at Georgia Coastal Plain experiment station in Tifton.

About 140 men interested in golf course management, research and commercial growing of turf grasses attended the conference. M. J. Jeffords, Jr., of Orangeburg, S C., association president, presided over the meeting.

On behalf of the Southern Golf Assn., Mr. Jeffords presented Dr. Glenn W. Burton, principal botanical geneticist at the Coastal Plain experiment station with $1.000 to be used at the station in financing golf turf experiments. On behalf of the association Mr. Jeffords also presented a personal gift of $100 to Dr. Burton in appreciation of his work in turf research over the years.

During the conference Robert W. Billett, Hialeah, Fla., from the O. E. Linck Chemical Co., discussed new developments in the weed control field. He pointed out that progress is being made in the field of weed control, and that research work is being done all the time along this line.

R. L. White, Mallinckrodt Chemical Co. of Charlotte, N.C., reported on new developments in fungicides.

According to the speakers the problem of combatting insects and disease on turf is one of the outstanding problems before golf managers.

Dr. Burton guided the men attending on a tour of research projects under way at the station. He pointed out that the goal of the research work is to produce a Bermuda grass that will stay green in southern states all the year. He said he did not see much hope of getting a lawn grass that will stay green all the year in the Georgia latitude. He added that grasses that stay green in the winter usually do not keep green in the summer.

Shade tolerance of various Bermudas is being tested at the station, and it has been found that Tiffine Bermuda, generally recommended for lawns, has more tolerance for shade than any other Bermuda grass. Tiffine was developed at the coastal station and released about 1952.

IOWA ALFALFA

AMES, IOWA—Alfalfa acreages in Iowa have doubled in the last 10 years, said J. M. Scholl, agronomist at Iowa State College. More than 2½ million acres of alfalfa and alfalfa-grass mixtures are harvested for hay and another half-million acres are grown for legume-grass pastures, he said.

Insecticide Granule Fumes Kill Aphids In USDA Experiment

WASHINGTON — Fumes from granules of a new organic phosphorus insecticide killed all pea aphids on alfalfa when applied broadcast to the soil surface of small experimental plots at the rate of 2 lb. an acre, the U.S. Department of Agriculture reported.

These are preliminary observations. Further experimentation will be necessary before this treatment can be recommended for aphid control.

Although the new insecticide, called Thimet, was intended for use as a systemic, it was observed that fumes of the chemical in granular form at 2% concentration proved sufficiently lethal under outdoor conditions to kill aphids as long as 10 days after application. Dr. William C. Cook of USDA's Agricultural Research Service conducted the investigations at Walla Walla, Wash.

Such fumigating action was of particular interest, Dr. Cook said, because the gases released were effective at relatively low temperatures early in the season when pea aphids begin destroying new alfalfa growth. This is the first insecticide observed to possess sufficient fumigating action to kill insects on plants in the field, particularly when temperatures are relatively low.

Temperatures averaged slightly under 45°, with a high of 64° and a low of 29°, during Dr. Cook's initial experiments from Feb. 25 to March 15, 1957. The average and extremes of temperature were about the same during 1958 experiments that began in late February to make certain that Thimet fumes, and not the systemic action of the chemical, killed the pea aphids. It was suspected in the 1957 experiments that Thimet, absorbed by the alfalfa, had killed the aphids after they had fed on the plant juices.

Effectiveness of the Thimet fumes was demonstrated on 20 by 20 ft. field plots in the 1958 experiments, Dr. Cook said, when many aphids were killed in untreated plots, located randomly adjacent to and downwind of treated plots. Only those aphids escaped that were on untreated plots upwind of treated plots. In these tests Thimet was used at rates of ½- and 1-lb. an acre.

Dr. Cook also demonstrated that Thimet used in granular form does not enter the alfalfa plant system before it kills pea aphids. This he determined by placing the insects in small cages to feed on the juices of single-leaf-and-bud combinations that they especially favor. The aphids were unharmed, although the leaves and buds from which juices were extracted were taken from plots that had been treated with Thimet granules as well as from untreated plots.

AGRICULTURAL BIPLANE — The new Grumman "Ag-Cat" designed for agricultural use was demonstrated recently on Long Island, New York. The plane, serving as a pesticide duster or sprayer is useful as an applicator of fertilizers as well. Safety innovations incorporated in the plane's design include better visibility, improved maneuverability, and placement of the airspeed indicator and engine tachometer in a location outside the cockpit in full view of the pilot. Payload is around 1,500 lb.

Western Sales Post Gain, Survey Shows

SALT LAKE CITY—A survey made by the Salt Lake City Tribune indicates increased fertilizer sales this spring.

More potash, nitrogen and phosphatic-type fertilizers and blends than ever before in area history are being sold, but profit margins for producers haven't improved much from the 1957-58 seasons, the survey shows.

Frank E. Adams, western manager for the coal chemical sales of U.S. Steel Corp., Salt Lake City, said that "consumption of all commercial fertilizers by farmers in the Intermountain area continues to increase each year and we predict that 1959 totals will rise an estimated five to 10 percent. This should be our best year in the sale of nitrogen fertilizers produced at Geneva works."

Elwood I. Lentz, vice president-general manager of Western Phosphates, Inc., Garfield, Utah, said his firm will experience its "best year from volume sales standpoint in history."

Lockwood W. Ferris, president of Bonneville, Ltd., Wendover solar evaporation potash producer, said that nationally, potash consumption should be up about 5 to 7% this planting season.

March Research Grants To University of California Total Nearly $20,000

BERKELEY, CAL.—Almost $20,000 was given to the division of agricultural sciences of the University of California to support several research studies in the field of agricultural chemicals, during March.

Among the nine cash grants are included one for research on the metabolism and the residue of gibberellic acid applied to fruits and vegetables. The Abbott Laboratories gave $2,500 to support this study.

The largest single donation during the 30-day period was for $4,000 by E. I. du Pont de Nemours & Co., Inc., for research with Nu-Green L-B fertilizer compound in the culture of citrus.

Two donations of $3.000 each were made by the Food Machinery and Chemical Corp., Niagara Chemical Division, for residue studies in entomology.

The American Potash Institute gave $3,000 for basic study of the mineral nutrition of the potato, with special reference to potassium nutrition and to leaf analysis as a diagnostic guide.

The National Plant Food Institute gave $2,673.18 as the second of three annual payments supporting research on soil-moisture-fertility relationships. Another installment of $2,500 was paid by the Herman Frasch Foundation for research on the effect of environment on the chemical constitution of plants in relation to disease and pest resistance. A total of $50,000 has been allocated for this project.

The Shell Chemical Corp. has given $1 000 for a study on the life cycle of the sheath nematode; the American Chemical Paint Co. gave $600 for research with 3-amino-1,2,4-triazole as an herbicide, and $250 was given by the Golf Course Superintendents Association of Northern California for research on turfgrass.

Canadian Plant Maintains Production Volume in '58

HAMILTON, ONTARIO — Production volume at Hamilton Works, Canadian Industries, Ltd., was maintained at a high level during 1958 in spite of increasingly severe competition, according to H. M. Jones, works manager.

A new unit for continuous production of precision granulated fertilizers was completed during the year and there was a slight increase in the average number of employees.

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INSECT, PLANT DISEASE NOTES

Pea Aphids, Greenbugs Reported in Kansas

MANHATTAN, KANSAS—Pea aphids are abundant in alfalfa in most areas of the state. Counts in south central Kansas were 100 to 200 per sweep of the insect net. Beneficial insect counts are low so considerable increase of forage on the first cutting can be expected if a high percentage of aphids are killed with insecticides.

Spotted alfalfa aphid counts are still low. This week (April 18) they were found only in Clark and Barber counties.

Greenbugs were found in all south central and south western counties surveyed. This includes the area from Hutchinson west to the Colorado line. Counts were generally less than 10 greenbugs per foot. Higher counts with some damage to plants have appeared in Barber and Cowley counties. Counts as high as 300 per foot have been found in Cowley county. High populations can be expected in central and western Kansas if the weather remains cool.

English grain aphids can be found in the same areas with the greenbugs. One wheat stop in Reno County had 50 winged English grain aphids per 10 sweeps of the insect net.

Tennessee Finds Low Weevil Survival Rate

KNOXVILLE, TENN.—Trash examinations this spring indicate that the average survival of boll weevils overwintering in West Tennessee is only 10%. Although this is regarded as a low number, there are enough weevils present that there can be some damage if the weather becomes favorable for build-up, according to R. P. Mullett, entomologist at the University of Tennessee.

The 10% survival this winter compares to 21% last year; 26% in the winter of 1956-57; and 90-100% in the winter of 1952-53.

Cabbageworm Warning Out in California

SACRAMENTO—All California county agricultural commissioners have been warned by the State Department of Agriculture to be on the alert for the presence of the purple-backed cabbageworm, a major pest of cruciferous vegetables.

George M. Buxton, entomologist for the California department, said there was no evidence of the pest in California although it has been collected in Oregon, Washington and Arizona. The cabbageworm damages cabbage, cauliflower, Brussels sprouts, horseradish, kale, kohlrabi and turnips.

Morning Glory Tabbed a Nuisance in Arizona

PHOENIX, ARIZ.—Finding all varieties of morning glories to be noxious weeds, the state is going to prohibit sale of any morning glory seed. The Agriculture and Horticulture Commission adopted the regulation recently at a public hearing at which morning glory defenders displayed cards reading: "Help stamp out cotton growers. Support the morning glory. It grows without a government subsidy."

Representatives of the Farm Bureau and the Arizona Cotton Growers Assn., however, contended the plant is a nuisance almost impossible to exterminate once it gets started in a field. They described the vine as a serious menace not only to cotton but also to hay, grain sorghums and other crops.

Saskatchewan Fights Grasshopper Pests

REGINA, SASK., CANADA—To assist farmers in combating grasshoppers in 1959, the Saskatchewan Department of Agriculture has purchased sufficient supplies of dieldrin to treat seven million acres. The chemical will be made available to farmers through municipal offices.

This was announced by Hon. I. C. Nollet, Saskatchewan minister of agriculture, in outlining the agriculture department's grasshopper control policy.

Mr. Nollet noted that through the bulk purchase of chemicals, the department has been able to progressively lower the per acre costs for grasshopper control, from a high of $3 per acre when the newer insecticides were first introduced in 1948-49, to the present level of 14¢ per acre. As a result, grasshopper control is now a comparatively cheap operation.

The minister also announced changes recently approved by the legislature dealing with grasshopper control. The provision for a municipal bylaw in the Rural Municipalities Act has been deleted and all legislation now comes under the Pest Control Act. Under an amendment to this act, municipal councils may pass a bylaw requiring all residents to carry out certain specified practices. In the event of failure to do so, the municipality may then step in and do the work, charging the costs to the owner.

"Saskatchewan may be faced with a major grasshopper outbreak this year and hatching could start early in May. I hope that by this time, each municipality in the forecast area will have passed its bylaw, appointed an officer to act as grasshopper control supervisor and carried out an educational campaign among the ratepayers, so that when hatching does start these pests may be speedily dealt with," the minister concluded.

Indiana Reports Many Crop Pests Active

VINCENNES, IND.—Plum curculio emergence has developed rapidly during the past 7 days. Seventy adults were jarred from 5 unsprayed trees on April 20. Tarnished plant bugs are quite active where sprays or dusts have not been applied to reduce populations. Stink bug populations are building up in peach orchards at the present time.

Red-banded leaf rollers have just started to hatch in this area. One out

47% of cattle & calves

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The USDA January 1, 1959 livestock inventory reports 96,851,000 head of cattle on US farms—3,501,000 more than a year ago. Growing the feeds for the growing animal population takes more commercial fertilizer!

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of 10 egg clusters examined April 20 was hatched.

Codling moth larvae started to pupate April 9. About 7% had pupated by April 13 and 26% had pupated on April 20.

European red mite eggs are still hatching. About 25% of the overwintering eggs were hatched on April 20. Nymphs have started feeding on the leaves.—D. W. Hamilton.

Chinch Bugs Hit Texas Sorghum Fields

ALICE, TEXAS — Heavy infestations of chinch bugs in grain sorghum fields have been reported by farmers in Jim Wells and parts of Nueces counties.

The lateness of the crop this year has made conditions favorable for such an infestation, according to L. E. Brandes, county agent. He says farmers can get a reasonably effective control by using recommended sprays and dusts.

He also recommends that growers treat the grassy areas adjoining the grain fields from which chinch bugs often migrate.

Weevils, Mites Show Up In New Jersey Report

NEW BRUNSWICK, N.J. — Blossom weevil is active now. Parasitization of weevils by chalcids has decreased. Fields that have not been previously infested may have trouble. One blossom weevil observed per 200 buds is a severe infestation and should be controlled.

Two-spotted mites are present on strawberry foliage generally throughout south Jersey. Capitophorus sp. aphids (virus carriers) were very few in number. Fields heavily infested last fall had few aphids this spring. Mulching seems to favor aphids, mites and cutworms.

Cutworms, probably variegated cutworm, have shown up in fields, particularly those which are mulched.

Spittlebug nymphs are showing up in small numbers. More have been observed already this year than all last year.

Connecticut Club Hears Talks on Pesticides

NEW HAVEN, CONN. — Representatives of the Federated Garden Clubs of Connecticut at their annual conservation meeting at the Connecticut Agricultural Experiment Station heard talks on pesticides by Dr. James G. Horsfall, station director, and Dr. Richard H. Goodwin of Connecticut College.

Dr. Horsfall used the gypsy moth control procedures in Connecticut as an example of one approach to a necessarily controversial matter of public concern. He pointed out that pesticides are necessary in present-day production of food crops. Use of these poisons, however, always involves a calculated risk, one of many that cannot be avoided. Whether to use pesticides on a community-wide basis, he said, is a matter that must be determined by the collective judgment of those who are able to evaluate the risk. The role of experiment station research, he pointed out, is to learn and make known the facts on which a reasoned decision can be made.

Dr. Goodwin said that the problem in use of pesticides lies in broadcast aerial sprays applied where no crop is at stake. "Not only are such sprays apt to be indiscriminate in what they kill," he said, "but little is really known of the physiological effects on harmless forms of life."

DECLARES DIVIDEND

NEW YORK—The board of directors of The American Agricultural Chemical Co., New York, voted to pay a regular quarterly dividend of 75¢ per share on all common stock, payable March 20, 1959, to stockholders of record at the close of business March 6, 1959. There are presently 627,969 shares of stock outstanding.

Simplot to Operate Idaho Phosphate Plant

POCATELLO, IDAHO—The J. R. Simplot Co. here has signed an agreement to operate the Anaconda Co. phosphate mines and plant at Conda, Idaho, according to Grant Kilbourne, vice president and general manager of Simplot's fertilizer division.

The agreement takes effect immediately. Mr. Kilbourne said the 29-year-old mine produced 200,000 tons of phosphate materials last year, and the management hopes to double this in 1959. Its output, he stated, will be shipped to the Anaconda Co. at Anaconda, Mont., to the Simplot plant west of Pocatello, and to other users.

Ozark-Mahoning Names Area Sales Representative

TULSA, OKLA. — The Ozark-Mahoning Co. here announced the appointment of Ralph E. Warren as sales representative in the eastern Kansas and Missouri area.

Mr. Warren, who has 10 years agricultural selling experience, was educated at the University of Missouri.

Pre-Emergence Herbicide Increase in South Predicted

MEMPHIS, TENN. — Use of pre-emergence herbicide on a half million acres of cotton in the midsouth area this planting season was forecast by Robert Harnden, vice president of Chapman Chemical Co., at a meeting of the Memphis Agricultural Club.

Mr. Harnden told the group the nation's cotton farmers are switching to weed-killing chemicals in increasing number to avoid the spiralling costs of cultivation. Pre-emergence chemicals reduce hoeing costs and the need for frequent cultivations and are excellent insurance against a wet year when weeds cannot be removed by other means, he said.

Fungicide Test Report Booklet Available

WINCHESTER, VA. — Published results of 1958 fungicide tests are available in booklet form, according to Dr. B. A. Groves, department of plant pathology and physiology, Winchester Fruit Research Laboratory, Winchester, Va. A price of $1 each is set on the volumes. The book is a compendium of results of experiments made with newer fungicides during the past season. Dr. Groves states that all orders should be accompanied by remittances made out to the American Phytopathological Society. An added charge will be made for postage and handling in cases where orders must be billed, he says.

CALIFORNIA STORE

BERKELEY, CAL. — A farm and garden supply store has been opened by Gertrude and Rudolph Postag, Jr., at 3271 Adeline St., Berkeley.

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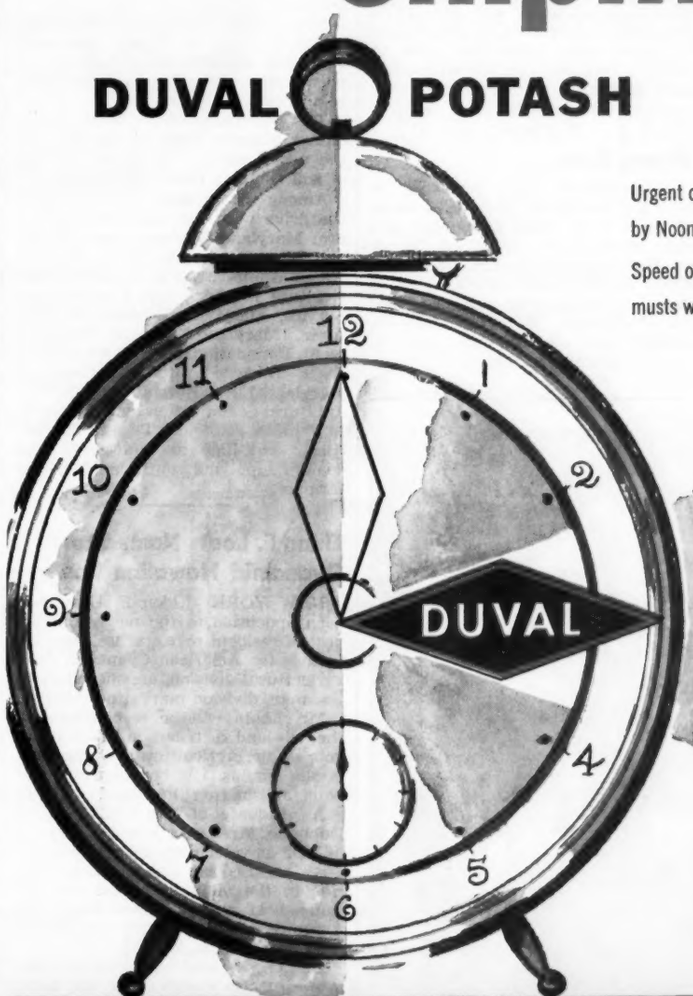

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James A. Graves

SALES REPRESENTATIVE—James A. Graves has been appointed sales representative for the Grand River Chemical division of Deere & Co. in the New Mexico, Southern Colorado and West Texas region, according to an announcement by John R. Taylor, Jr., sales manager. Mr. Graves has been associated with the fertilizer industry for many years in Texas. He makes his home in Plainview.

Retired Agriculture Deputy Dies in California

SACRAMENTO — Charles Josef Carey, born in San Jose, Cal., on May 27, 1894, retired deputy director of the California Department of Agriculture, died April 4, at Sutter Hospital, Sacramento.

Mr. Carey's service with the department had been continuous since 1932, except for a leave of absence in 1938 to act as manager of the Grape Prorate, and except for military leave to serve in World War II.

Mr. Carey was a past president of the National Association of Marketing Officials and had attended numerous national and state marketing conferences as the representative of the department.

NEW CROP

PORTLAND, ORE. — You don't catch Oregon people catnapping when there's a catnipping chance to establish a new crop. Take that on the finding of a New Yorker, who earlier this year asked the Oregon Department of Agriculture at Salem if it knew of any sources of catnip in Oregon. The department didn't, but told news media of the request. The department's latest word from New York: "I conducted a survey of the whole USDA and received a lot of replies, but your state nearly snowed me under." The New Yorker says the supply he found far exceeds his demands.

Texas Firm Ships First Bat Guano Load

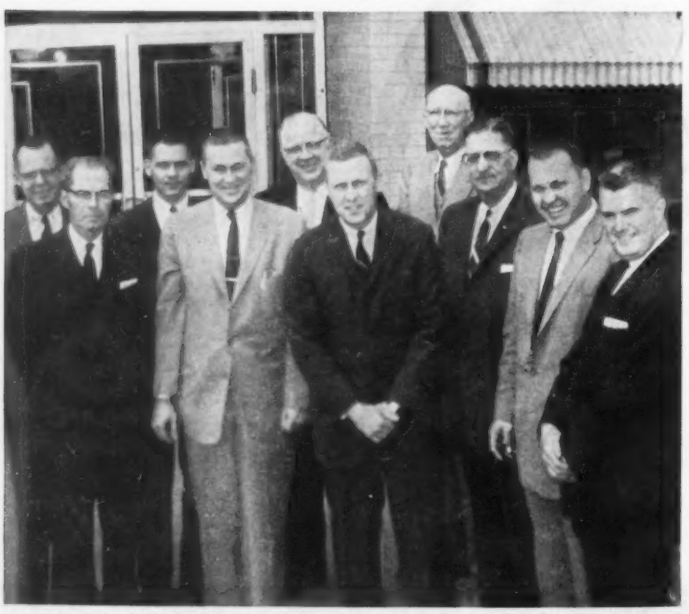
BRADY, TEXAS — The American Guano Co., which opened its field and exploration office here a few months ago, has just shipped its first load of bat guano to California.

George Campbell, production manager here, said that 16 men from Brady and San Angelo areas are presently employed by the company. Others will be added soon when the company expands its guano mining operations over the state.

The first shipments are being mined on a ranch near Rocksprings, according to Mrs. Lela Donnell, vice president of the corporation. She says the company has opened its business office in San Antonio, and plans to do considerable research on the needs of Texas soils. Later they plan to design a fertilizer formula with other plant nutrients to meet the specific needs of various soils.

Wrong Rates

A regrettable error appeared on page 3 of the March 30 issue of Croplife in a story about gibberellic acid tests conducted by the Wood Chemical Co., Lubbock, Texas. The story stated that rates of gibberellic tested were 1, 2 and 6 grams per acre. Donald A. Johnson, Wood Chemical Co. chemist, says that the rates were ½, 1 and 3 grams per acre.



ATTEND MEETING—Area sales representatives and district managers of the multiwall bag division, West Virginia Pulp and Paper Co., recently attended a two-day meeting at St. Louis. The session included four product familiarization clinics and a tour of the firm's recently acquired St. Louis plant. Among those at the meeting were, left to right: E. F. Groppe, plant customer service representative of the firm's St. Louis plant; E. B. DuBois, Minneapolis district manager; John Floyd of the company's packaging laboratory, Charleston, S.C.; Erle B. Swaim of Lincoln, Neb., sales representative, Kansas City district; J. O. Frahm, Chicago district manager; Matt Diedericksen, St. Louis plant technical service representative; James Compton of Wichita, Kansas, sales representative, Kansas City district; Norman Hansen of Fargo, N.D., sales representative, Minneapolis district; Roy Jury, Kansas City district manager, and T. L. Jones, regional sales manager from New York.

Five Maryland Counties Set for Fertility Drive

COLLEGE PARK, MD.—A five-county drive for soil fertility improvement in southern Maryland was announced recently. Aim of the summer-long campaign will be to "have every farmer in southern Maryland test his soil," according to the co-chairmen of the Southern Maryland Soil Fertility Improvement Drive. They are William E. Garvey, Charles County agent, and Dr. James R. Miller, extension soils specialist, University of Maryland.

Assisting on the general committee for the drive will be Ralph E. Motsinger, extension tobacco specialist; H. K. Nicholson, Anne Arundel County agent; Benjamin W. Smith, St. Marys County assistant county agent, and W. B. Vanderford, assistant county agent in Calvert County.

Abram Z. Gottwals, agricultural and public relations representative of the First National Bank of Southern Maryland, Upper Marlboro, was named chairman of the budget and publicity committee for the drive.

Mr. Motsinger will head up the fertilizer and lime demonstration committee.

Drive activities planned for the spring and summer will include a number of lime and fertility demonstration plots located on the main traveled highways in Prince Georges, Anne Arundel, Charles, St. Marys and Calvert counties. Tobacco and corn will be grown on the plots under medium and high productivity levels of fertilizer.

Educational exhibits to be shown at all of the five county fairs will show the superior results to be expected from using lime and fertilizer in profitable crop production.

The campaign will build to a climax between Sept. 14 and Oct. 10, the period set for the actual testing of soil samples taken by farmers.

Among the agencies cooperating in the drive with the extension service are: Maryland Bankers Assn., Farmers Home Administration, Farm Credit Administration, vocational agriculture teachers, Soil Conservation Service, Maryland Tobacco Growers Assn., Maryland Tobacco Improvement Foundation Inc., Maryland State Tobacco Authority, Southern Maryland Farm Bureau, Grange, Agricultural Stabilization and Conservation, press, radio and TV and the fertilizer and lime manufacturers and dealers supplying southern Maryland farmers.

Eldon F. Loats Named to Cyanamid Hawaiian Post

NEW YORK—Eldon F. Loats has been appointed to the newly created post of resident manager in Hawaiian Islands for American Cyanamid Co.'s agricultural division, announced B. F. Bowman, division marketing director.

Mr. Loats will be responsible for the sale and distribution of all products of the agricultural division sold in the islands. His headquarters will be established on the island of Oahu.

A graduate of the University of Dubuque, Mr. Loats joined Cyanamid in 1952 as veterinary sales representative for Lederle Laboratories Division in the midwest region. He became field sales representative for Acronize, a preservative extensively used on chickens, in 1955.

In 1957, he was appointed as manager of sales training for the farm and home division, now merged into the agricultural division. The following year he was made administrative assistant to C. D. Siverd, assistant general manager of the agricultural division.

CROP DUSTING FIRM

MARYSVILLE, CAL.—A new aerial crop dusting firm known as the Marquis Crop Dusters Inc., was formed at Marysville. Principal owners in the firm are Lawrence C. and Hazel I. Marquis.

Paul M. Marshall, Jr.

APPOINTED—Commercial Solvents Corp. has named Paul M. Marshall, Jr. to its agricultural chemicals sales staff, according to Clyde T. Marshall, sales manager for the agricultural chemicals department of CSC. Mr. Marshall is assigned to the company's St. Louis district office, and his territory will include Missouri and Iowa, with headquarters in Springfield, Mo. He is a graduate of Kansas State University and has had ten years of sales experience in the agricultural field.

Re-Mark Chemical Reorganized Under New Management

MIAMI, FLA.—Reorganization of the Re-Mark Chemical Co., Inc. under new management has been accepted by creditors and stockholders and approved by Emmett C. Choate, judge of the U.S. District Court for Southern Florida. Melvin Goldberg, New York, and William C. Webb, Miami, have purchased class A and class B stock in the company to refinance it in the amount of $350,000. This is in addition to new credit commitments and financing from suppliers.

The reorganization plan was recommended by C. Gordon Anderson, trustee, and provides that the owners of class A stock retain their interest in the corporation for 50¢ a share limited to the same amount of stock formerly held, with a par value of $1 for each share. All holders of stock now have equal voting privileges.

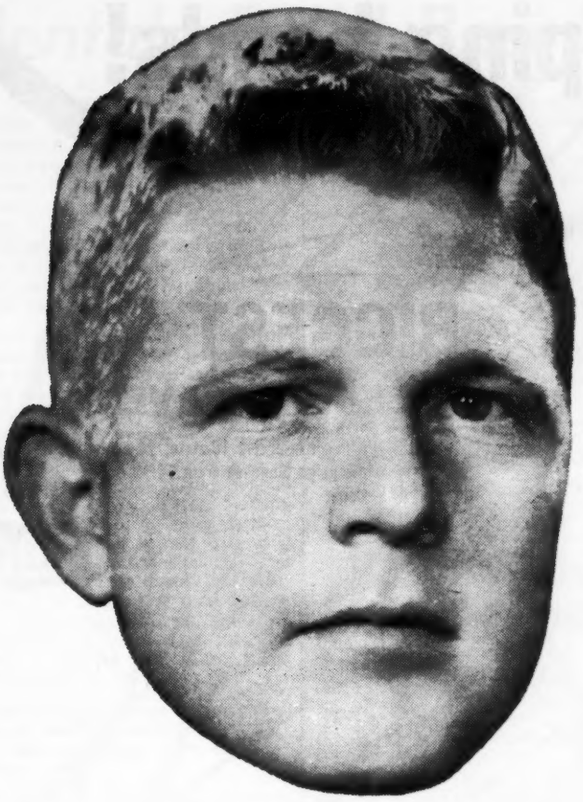
Re-Mark Chemical Co. was organized in March, 1946 and showed large sales increases during the first eleven years of business. It gained acceptance in the Florida market for its "Remarco" brands, including "Hurricane" and "Hurri-Green" products, which are produced in the fertilizer plant in Goulds and the consumer packaging and insecticide plant in Miami.

Harold E. McClean, president of the reorganized company, says every attempt will be made to regain previously-held sales figures. He also expects to add to them with the introduction of new fertilizer and insecticide chemicals as quickly as the repackaging and distribution program can be organized.

ENTOMOLOGY APPOINTMENT

ATHENS, GA.—Robert L. Robertson, native of Blountsville, Ala., has been appointed to the entomology department of the Agricultural Extension Service, University of Georgia, announced W. A. Sutton, extension director. Before his appointment to the extension post, Mr. Robertson was with the American Cyanamid Co. of New York, and formerly he was a member of the research staff at Alabama Polytechnic Institute where he received his B.S. degree in agriculture in 1950, and his M.S. degree in entomology in 1954.

THE MAN WITH THE MULTIWALL PLAN



UNION
PACKAGING SPECIALIST
GENE CARTLEDGE

helps Multiwall user reduce bag costs $4.05 per M

In Multiwall packaging, paradoxically, it's sometimes necessary to add in order to reduce. Take the case of one leading company whose bag designs recently were analyzed by Union Packaging Specialist Gene Cartledge.

The firm uses Sewn Open Mouth Multiwalls in part of its operation. Cartledge recommended adding Union's special SEW STRONG construction (reinforcing strips at top and bottom of bag). The stronger closure enabled the basis weight of each bag to be reduced by 10#. The new sewing method led to a reduction in bag length, an improved bag design—and $4.05 per M savings! Another recommendation: convert all the firm's present Sewn Valve Multiwalls to Sewn Open Mouth types. This complete changeover will further streamline bagging and, based on the company's annual requirements, result in thousands of dollars in additional savings.

Union Multiwall Recommendations are based on this 5-Star Packaging Efficiency Plan

- DESIGN
- EQUIPMENT
- CONSTRUCTION
- SPECIFICATION CONTROL
- PLANT SURVEY

Every day, Union's 5-Star Packaging Efficiency Plan is helping packers like yourself get more for their Multiwall investment. Yet it costs nothing to put it into action. Write today for complete details.

Better Multiwall performance through better planning

union camp

UNION'S PACKAGE ENGINEERING DEPARTMENT will study your Multiwall bagging methods and equipment and make appropriate recommendations, regardless of the brand of Multiwalls you are now using.

UNION MULTIWALL BAGS

UNION BAG-CAMP PAPER CORPORATION
233 BROADWAY, NEW YORK 7, N. Y.

Great 1959 Hi-D® AMMONIUM NITRATE program gives you 5 helping hands!

❶ BIGGEST OUTDOOR EVER

— with powerful four-color billboards dominating the rural scene at 710 locations in 8 key states.

❷ BIGGEST TELEVISION EVER

— with an intensive 10-state, 13-week campaign launched from 14 TV stations.

❸ BIGGEST RADIO EVER

— using 67 stations to blanket 15 states with the Hi-D story for a solid 13 weeks.

❹ DYNAMIC 4-COLOR ADVERTISING

— in "Farm Journal" . . . "Capper's" . . . "Progressive Farmer" . . . and "Farm & Ranch" for a whopping delivery of over 17,000,000 sales messages about Hi-D.

❺ POWERFUL POINT OF SALE

— with four-color window banner, counter displays, samples, consumer folders and technical data service.

The 1959 Hi-D Program is the soundest and sellingest you ever benefited from. And — every ad emphasizes the mixed goods you sell, tells your customers that mixed fertilizer comes first, then the supplementary boost of Hi-D.

COMMERCIAL SOLVENTS CORPORATION

STERLINGTON, LA. • ST. LOUIS, MO. • ATLANTA, GA. • TERRE HAUTE, IND.

Special Merchandising Section

Better Selling

Marketing News and Features

Rentals Build Business for Ohio Farm Store

By AL P. NELSON
Croplife Special Writer

When a customer walks into the Kennedy & Kuhn Co. in Van Wert, Ohio, especially in the spring and summer season, he will notice two things.

The first is that farm chemicals are displayed on the floor at this time of the year—right in the salesroom, which means he can't miss seeing them.

The second thing the farmer will notice is that there are signs here and there which advertise the fact that the firm will rent sprayers, chain saws, sub soilers and other equipment at nominal fees.

This rental merchandising idea is one which is rapidly taking hold in many rural areas, where farmers are considering doing more custom work, rather than buying large and heavy farm machines which they can use only part time during the year. These alert farm store men are always glad to sell sprayers and other heavy farm equipment, but they are cashing in on the demand for rental of equipment as well.

According to Walter Kennedy the fastest moving rental items are field sprayers, chain saws and sub soilers.

Mr. Kennedy reports that the firm charges $1.50 an acre for a $15 minimum for the rental of a big sub soiler. Mr. Kennedy and his partner leave it up to the farmers to tell them how many acres they process with a sub soiler, and the farmers like this.

"We think they are pretty honest on this deal," says Mr. Kennedy, "and it also gets our equipment out working where a lot of farmers can see it."

Mr. Kennedy also points out that when customers rent sub soilers in the spring, they are ready to consider renting or buying field sprayers, and this is what Kennedy & Kuhn suggests to many of them. It's a good time, too, to talk about the early ordering of spray materials.

KENNEDY & KUHN CO., in Van Wert, Ohio, is pictured in the photos above. The top photo shows the trim, neat exterior of the firm. Units of rental equipment which the firm has available are shown in front. In the bottom left photo, Paul Kuhn serves a customer a courtesy cup of coffee. The free coffee angle pays off in friends, Mr. Kuhn says. In the bottom right photo, farm chemical items are displayed on the floor during the spring and summer season to attract attention. "We make extra sales from this placement," says Mr. Kuhn.

Stubble choppers rent for $1.50 an acre. They are especially useful to the customer who has only 12 to 15 acres in stubble, and he feels he cannot buy a chopper for this purpose. So he figures the rental service is more economical for him.

On chain saws the rental is $12.50 per day, because there is more service on such equipment than on others. At times the Kennedy & Kuhn firm has six chain saws out on rental. Many farmers have excellent use for them on woodlots. The field sprayers are usually rented on an acreage or day basis. Much depends upon whether the customers purchase their own chemicals elsewhere or if they buy from Kennedy & Kuhn.

"Renting equipment like this increases store traffic and brings us into contact with more farmers," says Mr. Kuhn. "Lots of rental customers buy equipment from us, especially chain saws. There are a lot of farmers who get accustomed to using chain saws through a rental deal and then develop the desire to have one for future woodlot operations."

The rental service, too, appeals to the small farm owner who has limited acreage and who works part time in town or city to supplement his income. Therefore he feels he can rent some equipment cheaper than he can buy and own and operate it.

The sub soiler and other rental equipment at this store is advertised by large signs with red and black lettering. They are on the wall above the service counter where farmers entering the store can see them. Mr. Kennedy and Mr. Kuhn do not publish the rental rates, for they want farmers to inquire about them. And they do. Even farmers who may have no immediate intention of renting equipment like to know what the rates are. This gives the owners an opportunity to tell such men—as well as to active prospects — just what the rental program is. It is also a sales talk for efficient farm equipment, too, in an indirect manner.

"Those signs really help a lot," says Mr. Kuhn. "We serve free coffee every day to farmers. They like nothing better than to drink coffee and chat about the rental equipment, new farm machinery, crops, local happenings and such. The coffee service is a traffic builder. Farm-

(Turn to RENTALS, page 13)

Diversification of Merchandise Increases Volume, Store Traffic for New York Dealer

The modern farmer has need for many types of related merchandise and he would like to get most of it at a one-stop farm supply store. Naturally this means that diversification of merchandise is very likely to produce many seasonal high points in volume to the alert dealer who merchandises intensively.

In the case of the Farm & Home Store, Randolph, N.Y., Wilson Haas, the owner, has enough diversified farm supply lines so that he can get considerable volume from the dairy and poultry farmers in the area, while at the same time he carries lines that appeal to city and suburban residents. Between these two types of trade, Mr. Haas manages to attain a sizable volume of business. Catering to both farm and suburban and city trade is something many feed and farm supply organizations in the eastern part of the country are doing.

WILSON HAAS is the owner of the Farm and Home Store in Randolph, N.Y. In the above picture Mr. Haas and one of his employees talk shop with a visiting farmer and his wife. Note extensive outside displays.

Mr. Haas sells insecticides, farm chemicals, chain saws, bulk milk tanks, farm machinery and farm and home appliances to farmers. He sells insecticides, garden seeds and supplies, home appliances and paints to suburbanites. In addition he rents industrial equipment.

His volume runs about 60% to farmers and 40% to city and suburban home owners. And this combination of lines and customers makes a happy and profitable combination for him.

With all his lines, Mr. Haas is able to provide work for three store and shop men, one outside salesman and one refrigeration and TV man. The latter also sells and installs the bulk milk tanks. He sold about 25 tanks the past year. About 50%

(Turn to NEW YORK, page 14)

ANOTHER SERVICE

BROWNFIELD, TEXAS—Another feature has been added to the growing departments of the Western Grain and Farm Store here, owned by Mr. and Mrs. Joe Christian. They are starting a landscaping service, which includes yard planning and the establishment of trees, shrubbery and flowers.

Another addition for the immediate future is the manufacture of feed, using the farmer's grain and mixing it with a supplement.

In growing from a small store in 1950 to a firm that now has a $40,000 payroll, Mr. Christian has tried to add features which will fill in the slack seasons. Large increases have also been achieved in field and garden seeds, fertilizers and insecticides.

What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6899—Drosophila Fly Control

"Drosophila Fly Control" is the title of a booklet recently published by Chemical Insecticide Corp. The booklet contains data compiled by the research staff of the firm, and the information is designed as a guide to effective control of the Drosophila fly. Pyrix 10, an insecticide developed by the company, is discussed at length. A section on how to control the fly under various conditions is included. A list of the firm's other products is also presented. For copies, check No. 6899 on the coupon and mail.

No. 6900—Weed Killer Film

A 10 minute, one-reel movie featuring the "fate of five noxious weeds," has been released by E. I. du Pont de Nemours & Co., Inc. The film is 16 mm., full color, with sound. Field bindweed is the chief "villain" of the film, but leafy spurge, Russian knapweed, Bur ragweed and Canada thistle also play prominent roles. Du Pont's weed killer, "Trysben" 200, is also featured. The film is available for showing before agricultural groups. For more information, check No. 6900 on the coupon and mail.

No. 6901—Spreader Literature

Literature describing the Challenger lime and fertilizer spreader has been published by the manufacturer, Highway Equipment Co. The Challenger is a positive feed, self-unloading lime and fertilizer spreader which offers either a single spinner with an 18 in. conveyor or twin spinners with a 24 in. conveyor. For copies, check No. 6901 on the coupon and mail.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6889—1959 Sprayer Line

The 1959 line of spray equipment, with additional improvements and simplifications, has been announced by Century Engineering Corp. The "A-2" sprayer will be standard with 6-row boom that can be converted to 8-row with a set of extensions, the company said. The basic unit can be used on a tractor or trailer mounting and the dealer has a choice of pumps.

Improvement features, according to company literature, include increased boom height adjustment, improved regulator, a self locking chain for height adjustment, a regulator stand which places the regulator close to the operator and more factory assembly. Complete details are available by checking No. 6889 on the coupon and mailing to this publication.

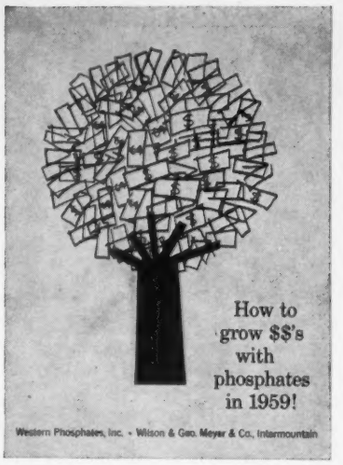
No. 6890—Applicator

Gustafson Manufacturing Co., Inc., announces the addition of the CS-G model for chemical band treatment to

the company's line of Chem-Soil Mixers. The model was developed, company literature says, for the application of fungicide to control Southern blight in peanuts, but it also may be used for dust and granular insecticides, herbicides and dry fertilizer materials. The unit is easily mounted on the tool bar of most tractors and planters, the company says, together with a chemical distributor to apply and mix the chemical simultaneously with planting. The distributor meters the chemical over a 10 in. band centered on the furrow. A double gang of rotary hoes serves to mix the chemical with the soil to a proper depth, the company says. Check No. 6890 and mail for details.

No. 6892—Fertilizer Promotion Kit

A dealer promotion kit containing sample sales aids for Anchor phosphate fertilizers has been announced by Wilson and Geo. Meyer & Co., Inc. Included in the kit are Anchor "Crop Quiz" pads, dealer ad proofs, a broadside for store display, an illustrated information booklet and a counter display containing free literature. The



broadside has an attached dealer reply card. Details are available by checking No. 6892 on the coupon and mailing to this publication.

No. 7452—Equipment Leasing Study

"The Pros and Cons of Equipment Leasing for Smaller Manufacturers, Stores and Supermarkets," is the title of a study published by the Foundation for Management Research. The 16-page study discusses the cost of leasing compared with outright purchase and purchase through conditional sales contract. Complete cost charts are used to illustrate the material. Advantages and disadvantages of equipment leasing in specific business situations encountered by smaller enterprises are set out in detail. Copies are available by checking No. 7452 on the coupon and mailing to this publication.

No. 6894—Cattle Spray Brochure

A colorful, fold-out type brochure has been made available by Glenn Chemical Co., Inc., concerning the firm's product "Tabatrex." The illustrated publication contains information about what the product can do for dairy herds, the farmer, the dealer and the distributor. Aimed at all formulators, the brochure discusses the firm's 1959 advertising and promotion plans. Specifications and information about the product are given. Copies are available by checking No. 6894 on the coupon and mailing.

No. 6893—Plastic Sprayer Nozzle

Delavan Manufacturing Co. has introduced a nylon nozzle for use in the agricultural sprayer industry. According to the company, the basic advantage of the nozzle lies in its ability to

withstand the corrosive effects of agricultural chemicals, especially the liquid fertilizer solutions. The available nylon parts consist of the nozzle cap, nozzle body and nozzle strainer. The tip can be furnished in brass, aluminum or stainless steel. Complete details are available by checking No. 6893 on the coupon and mailing to this publication.

No. 6891—Liquid Seed Bean Treatment

Parsons Chemical Works announces a "Seed Saver Brand" B-59 liquid seed bean treatment, with or without

Send me information on the items marked:

- ☐ No. 6889—1959 Sprayer Line
- ☐ No. 6890—Applicator
- ☐ No. 6891—Liquid Seed Bean Treatment
- ☐ No. 6892 Fertilizer Promotion Kit
- ☐ No. 6893—Plastic Sprayer Nozzle
- ☐ No. 6894—Cattle Spray Brochure
- ☐ No. 6895—All Purpose Sprayer
- ☐ No. 6896—Grass Control Promotion
- ☐ No. 6897—Insecticide, Fumigant Bulletin
- ☐ No. 6898—Mobile Sprayer Bulletin
- ☐ No. 6899—Drosophila Fly Control
- ☐ No. 6900—Weed Killer Film
- ☐ No. 6901—Spreader Literature
- ☐ No. 7452—Equipment Leasing Study

(PLEASE PRINT OR TYPE)

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

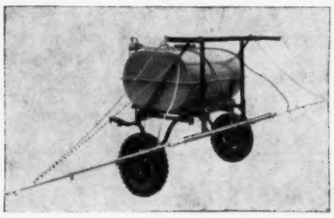
P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

dye. The product is a liquid insecticide and fungicide for all varieties of seed beans. According to company literature, the treatment eliminates mold, seedling blight, seed-borne organisms and soil-borne organisms. It also controls damage from wireworms and maggots, the company says. The material can be used in any automatic or slurry bean treater, the company said. Complete information mailed upon request. Check No. 6891 on the coupon and mail.

No. 6895—All Purpose Sprayer

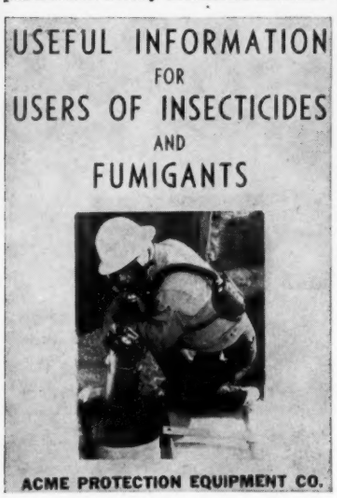
A new model all purpose sprayer has been introduced by Spra-White Chemical Co. Called the "Spra-Master," the unit features a fiberglass



tank and "boom extenders." The fiberglass tanks are new with the company this year and are available in 200 gal. capacity only, the firm said. The tanks are also available separately for mounting on any trailer or trailer sprayer and can be ordered in any color when ordered as tanks alone, the company says. The Spra-Master carries a three section, 20 ft. aluminum or galvanzied steel boom. Boom extender nozzle attached to the ends of the boom as standard equipment offer a continuous spray pattern approximately 10 ft. beyond each end of the boom, the company says. For details, check No. 6895 on the coupon and mail.

No. 6897—Insecticide, Fumigant Bulletin

"Useful Information for Users of Insecticides and Fumigants," is the title of a bulletin made available by Acme Protection Co. The four-page publication briefly assembles informa-



tion on the history, use, hazards and protection for users of modern insecticides. It also describes available mask equipment. Copies of Bulletin No. 591 are available upon request. Check No. 6897 on the coupon and mail to this publication.

No. 6898—Mobile Sprayer Bulletin

Mobile "Paragon" power and hand sprayers for lawn and garden use are detailed in a fully-illustrated bulletin published by the Campbell-Hausfeld Co. Featured in the bulletin are two new 15 and 30 gal. power sprayers, the company says. The bulletin illustrates both units and details construction highlights. Features of the company's hand sprayers are shown in a cutaway illustration. This section also describes operating features. Accessories and other models are also described and illustrated. Copies are available. Check No. 6898 on the coupon and mail.

No. 6896—Grass Control Promotion

A promotion program based on trial of the product has been launch-

ed by the Dow Chemical Co. The program will support the sale of Dowpon as a grass control agent, the company said. Feature of the promotion will be the offer of free trial packages of Dowpon through Dow dealers, the company said, and all dealers signing up for the program will be stocked with 2 oz. packets of Dowpon to be given away to customers. The sample contains enough herbicide to treat 225 sq. ft. in a fence line, along a driveway or around a building, the company said, and the material can be applied with usual hand equipment or even with a sprinkling can. Details can be obtained by checking No. 6896 on the coupon and mailing to this publication.

AGRONOMY APPOINTMENTS

STATE COLLEGE, MISS.—Rollin C. Glenn has been appointed assistant professor of agronomy at Mississippi State University, succeeding Dr. Roland Cowart. He also was appointed assistant agronomist for the agricultural experiment station along with Charles E. Vaughn.

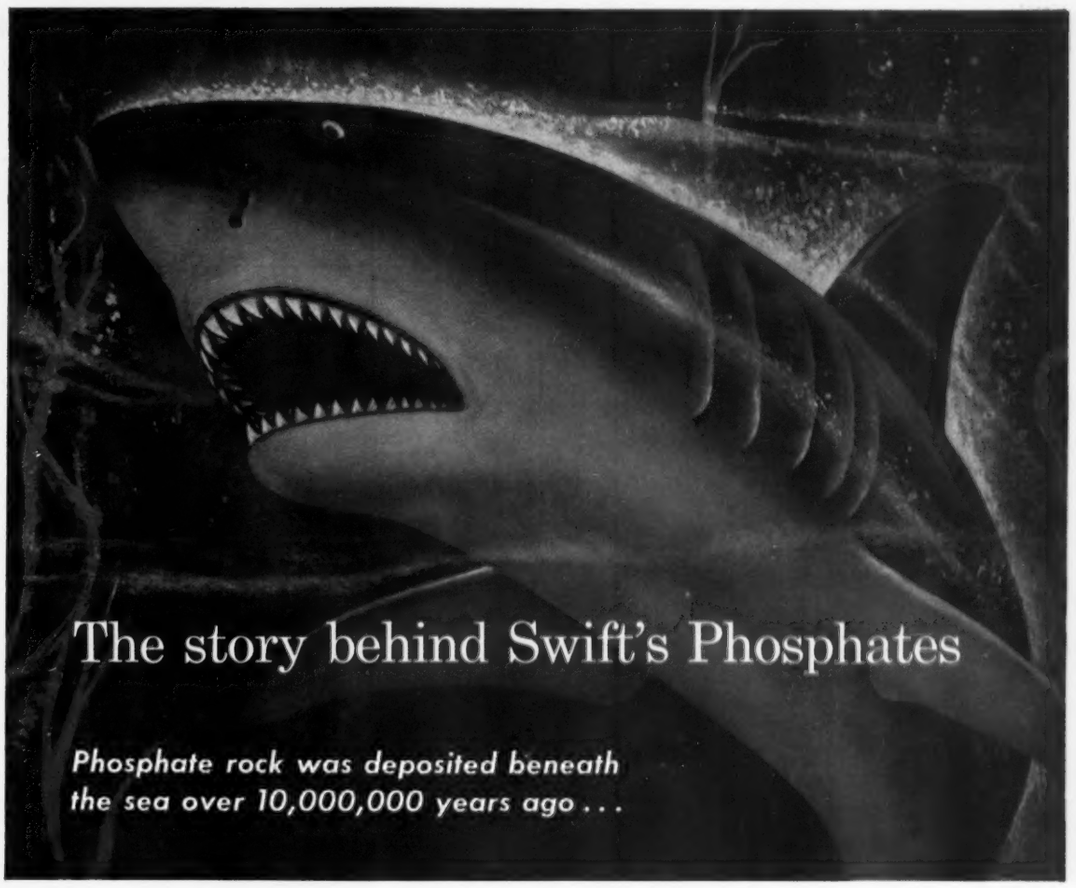
Agronomists Say Nebraska Lime Need Increased

LINCOLN, NEB.—A million tons of lime should be spread on Nebraska soil each year for the next 10 years to meet crop needs, according to estimates by University of Nebraska agronomists.

The estimates are based on 4 to 5 million acres which should be limed before alfalfa, sweetclover, red clover, birdsfoot trefoil and similar legumes are seeded.

One-half million acres of lime deficient soil are planted to these crops every year, the agronomists said.

Nebraska farmers spread 160,000 tons of liming materials on their crop land in 1954, but only 50,000 tons in 1957, according to A. V. Nordquist, chief of the state-federal division of agricultural statistics. At an average rate of two tons an acre, this was 80,000 acres limed in 1954 and only 25,000 acres in 1957.

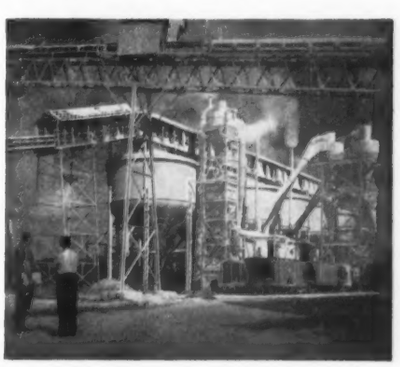


Today, Swift technology transforms it into forms you can use most profitably

Fossilized remains of giant prehistoric sharks in Swift's Florida phosphate rock deposits tell us these beds were formed at the bottom of a sea 10 to 15 million years ago.

But all Florida pebble phosphate rock had the same beginning. The difference comes much later. It comes in the extra care Swift takes in processing to assure uniformity of grade and grind. It comes in Swift's careful attention to your delivery requirements.

Before you settle on your source of phosphate rock, ground phosphate rock or triple superphosphate, ask to have a Swift Phosphate Center representative outline what extra care can mean to you. Or write for illustrated brochure to SWIFT & COMPANY, Phosphate Center, Bartow, Florida.



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Swift
104TH YEAR

P-1

To Serve Your Industry Better
WITH PHOSPHATE ROCK,
GROUND PHOSPHATE ROCK
AND PC-47 TRIPLE SUPERPHOSPHATE

Doing Business With

Oscar & Pat

By Al P. Nelson

A tall young man came into the Schoenfeld & McGillicuddy store and looked about uncertainly. Pat was out selling, Tillie was in the washroom and the only person visible was balding, stern-faced, and pot-bellied Oscar Schoenfeld.

He sat at his desk busily figuring discounts and checking bills, and did not even look up when he heard the door open.

The young man coughed. "Is Mr. McGillicuddy here?" he asked timidly.

"He shouldt be here, but he ain't," Oscar snapped. "What you want with him?"

The young man clutched a large envelope under his arm. "Oh, I have to see him personally."

"On business?" Oscar asked suspiciously.

The young man nodded.

"Then I'll take care of it," Oscar said. "What's that you got under your arm?"

The young man looked miserable. "A—a proof of an ad."

"Our adt?"

More miserable than ever, the young man nodded.

"Gif it to me," Oscar commanded sternly. "I will take a look at it."

"B—but my boss said I should give it to Pat and nobody else," the young man stammered.

"I own haf of this business," Oscar said sharply. "It is my business as much as it is the Irisher's. Gif me the adt."

The young man moaned under his breath and handed the envelope to Oscar. The latter ripped it open and spread out a large sheet of paper on which a half page ad was laid out.

"Himmel!" Oscar exclaimed. "That Irisher wants to buy the whole paper."

His eyes darted sharply over the copy. It appeared to be the result of a local survey which Pat had made concerning custom farm work rates in the area. They were divided into tilling and seeding operations, harvesting operations, forage harvesting and spraying and dusting rates.

Under spraying, the custom rates averaged about $3.25 an hour or $1.60 an acre for spraying weeds; spraying and dusting field and truck crops $3.80 an hour and $1.75 an acre with ground equipment and $3.65 an hour with aerial equipment. Spraying and dusting of fruit trees averaged 38¢ a tree. Barn spraying rates paid by farmers averaged $4.40 an hour or 25¢ a lineal foot.

Plowing rates were listed at $3.25 an hour or $3.50 an acre. Other rates followed.

"That dumbkopf!" burst forth Oscar. "We don't plow landt for farmers and we don't disc and cultivate. Why iss he advertising rates for that schtuff? And it is too early for spraying and dusting rates. That Irisher—he should visit one of them head shrinker fellows. He shouldt haf his brain examined—at his own expense."

"I have to hurry back with the proof," the by now upset young man said, worriedly. "The paper is almost ready to go to press. Can't you just look it over for mistakes?"

"Ach, the whole adt is a mistake," Oscar said. "Such foolishness. This will not sell fertilizer for us. Go back to your boss. Tell him the adt is cancelled—like this." And Oscar tore the ad in half and then in quarters and threw it into the wastebasket.

The young man's face got white. "Oh my, oh my!" he exclaimed wringing his hands and backing toward the door, "what will my boss say? Oh my."

In fact he backed right into Pat McGillicuddy who came in at that moment. "Oh, sir," said the young man, "your partner doesn't want the ad to run. He tore it up."

Pat's face turned white. "Did you, Oscar?"

"Yah, sure I didt. I am safing us some money. McGullicuddy, why are you advertising spraying and dusting? It's too early. Andt the plowing rates. We don't plow landt."

Pat turned to the shaking young man. "You can go back to the plant. Tell Gil I'll be over to see him in about 10 minutes. Tell him to draw another proof and have it ready."

After the young man had gone, Pat took off his coat and hat and sat at his desk. His steady blue eyes fixed themselves on Oscar.

"Oscar, what would you do if I tore up all those discounts you had figured out?"

"What wouldt I do? I wouldt get goodt and madt."

"Well, you tore up my ad and I'm mad, too. You didn't even wait to ask me my reason for publishing a custom farm work advertisement."

"I didn't need to. Himmel, it's such foolishness."

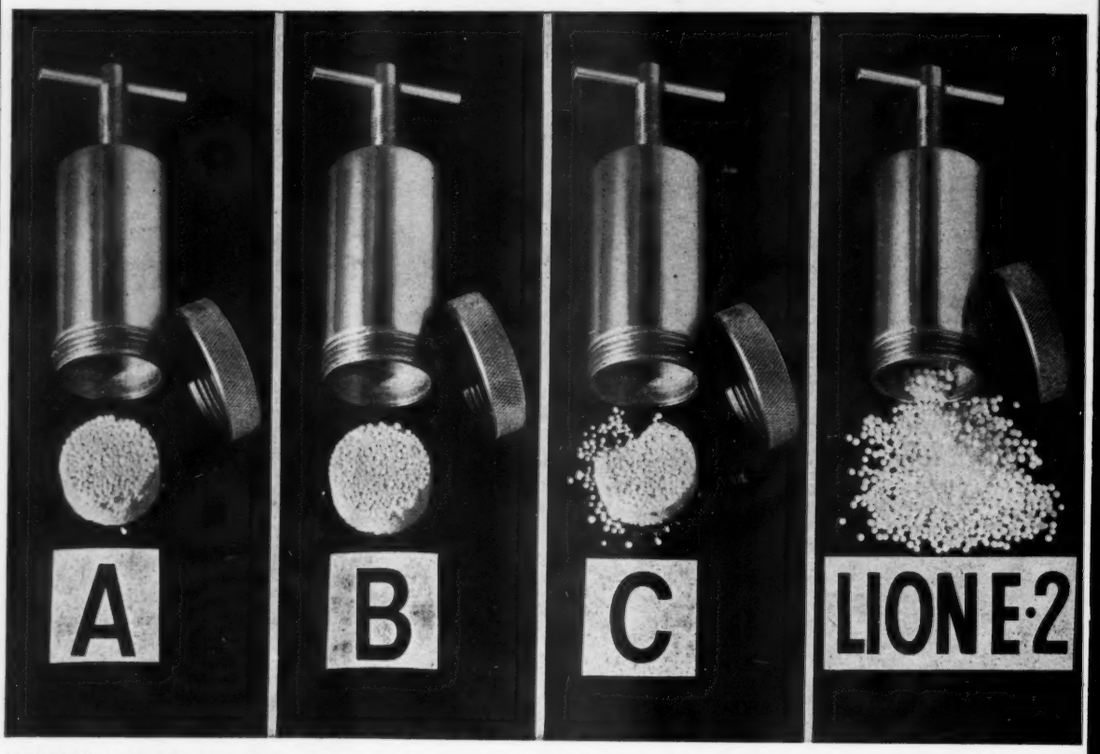
Pat snorted. "It is not. Now you listen to me. I worked hard to get these custom rates together. There are a lot of farmers who don't wish to buy some specialized machinery. They would rather hire some custom work done instead. But they don't know prevailing rates."

"Then let them find out for themselves," Oscar snapped. "Instead of you going aroundt on such foolish survey work, why don't you collect the money they owe us? Who do you work for—us—or the Red Cross and the Salvation Army?"

Pat sighed with exasperation. "Os-

It's a fact: Monsanto's new fertilizer discovery acts like "profit insurance" for you!

ONLY NEW LION E-2* ENDS



COMPRESSION CHAMBER TESTS PROVE NO OTHER AMMONIUM NITRATE CAN MATCH NEW LION E-2 FOR NO-CAKE, DUST-FREE PERFORMANCE

No more customer complaints, costly returns, double handling or extra bookkeeping when you sell new Lion E-2 no-cake ammonium nitrate fertilizer. Here's the whole profit story.

New Lion E-2 is the first truly non-caking ammonium nitrate. Lion E-2 was developed by Monsanto scientists seeking to end one of the major problems plaguing you and your customers: fertilizer caking. Tested in the field under all extremes of temperature and humidity, Lion E-2 just wouldn't cake.

New Lion E-2 won't gum up, clog or bridge in your customer's spreader. The uniform prills are 50% harder . . . free of irritating dust and fines. They won't break down, crumble or cake either in shipment or storage.

New Lion E-2 takes 20% less of your storage space because it's super-dense. It has the greatest density of any ammonium nitrate made today. Lion E-2 saves your time, storage space, and makes your handling job easier.

New Lion E-2 lengthens your selling season because it's storage-stable. It is not readily affected by temperature changes or humidity. Your customers can buy any time and store safely until used. LION E-2 may well prove your big *year-round* volume builder!

Lion E-2 is guaranteed not to cake in the bag in your place or on your customers' farms. From all angles, Lion E-2 is the superior-quality ammonium nitrate . . . yet it sells at ordinary ammonium nitrate prices. Sell your customers the best . . . you'll keep old customers coming back and gain many more new ones who want the best: new Lion E-2.

car, our name is at the bottom of the ad. The ad says that farmers should clip the ad and post it on a barn wall so they can consult it when they need such services. Some farmers are going to contract for custom plowing now. That's why that ad is not one bit too early."

"Only farmers that have no goot credit will want that custom work. A goot farmer has pridt. He wants his own machine."

"Oh no, not today. It pays to have some custom work done on the modern farm. That's why this chart is important. Farmers will know we got it out, and they'll think of us when they have fertilizer to buy and spraying materials. No other dealer has even gotten out such a complete chart in this county. So we get the glory."

"Yah, that's all we will get—andt the bill, too. But, I don't worry. I cancelledt the adt."

Pat rose to his feet. "And I am going right down to the newspaper office now and okay another proof. That ad is going to run. And if you don't like it, then buy me out. I'm willing to sell."

And with that remark Pat walked quickly out the door and slammed it behind him.

Oscar sat staring at the wall. "Buy him oudt!" he said, thoughtfully. "Himmel, I haf the money to do it. Ach, I wonder if I couldt make it pay? The safings I wouldt make aroundt here and the lights I wouldt turn out! Maybe I'll ask Minnie and see what she thinks. Yah."

WEED EXTERMINATION AREA

IDAHO FALLS, IDAHO—Bonneville County commissioners have created a noxious weed extermination area, embracing all of the county, for the purpose of exterminating or controlling 17 varieties of weed.

Georgia Cotton Grower Plans All-Out Assault on Three-Bales-Per-Acre Goal

ATHENS, GA.—Three bales per acre is the goal W. H. Williams, Crisp County cotton grower, has set for himself in 1959, according to W. G. Nix, county agent in Crisp County.

Growing large yields is no novelty to Mr. Williams, the county agent pointed out. In 1957 he produced 1,200 lb. an acre and last year he came close to the three-bale average with 1,449 lb. of lint an acre on 24 acres.

Mr. Williams' 1958 yield was one of the highest on record in the state, according to D. L. Branyon, agronomist of the University of Georgia Agricultural Extension Service.

This Crisp County farmer, he said, follows good cotton production practices, uses a lot of fertilizer, sidedresses heavily and does a good job of controlling cotton insects.

In producing the high yield in 1958 Mr. Williams used 1,000 lb. of 5-10-15 fertilizer at planting and sidedressed five weeks later with 142 lb. actual nitrogen an acre. He made eight shallow cultivations and applied pesticides to his cotton fields 20 times.

The cotton was harvested by hand during "perfect" weather and Mr. Williams said his grades were the highest he has ever had.

Mr. Branyon pointed out that Mr. Williams is demonstrating good cotton production practices to other farmers in his area and predicted that many of them will be following his methods this year to produce the same kind of yields.

RENTALS

(Continued from page 9)

ers go out of their way when in town to come over and have a cup of coffee. We've made many a farm equipment sale through contacts set up with the coffee service."

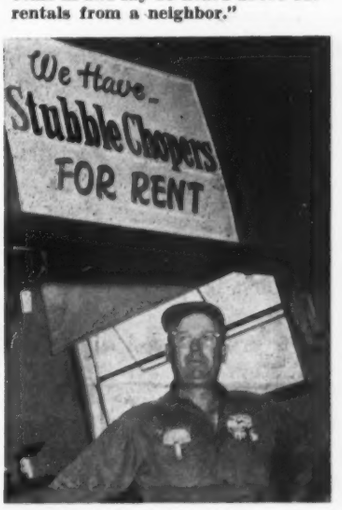
The coffee here is good, too, because Mr. Kuhn sees that it is brewed properly. He's a restaurant man himself, owning a restaurant in Toledo. He operates it more or less by remote control, as he spends most of his time at the farm store.

Along with the rental of farm sprayers, the firm pushes farm chemicals. During the season when farmers buy and use such chemicals the dealers place a display of these packaged items in a row on the floor in one area of the showroom.

"Believe me, the farmers see these items, because of their placement," says Mr. Kuhn, "and we make extra sales from this. If we had these seasonal items on shelves we'd make fewer sales. Our records show it."

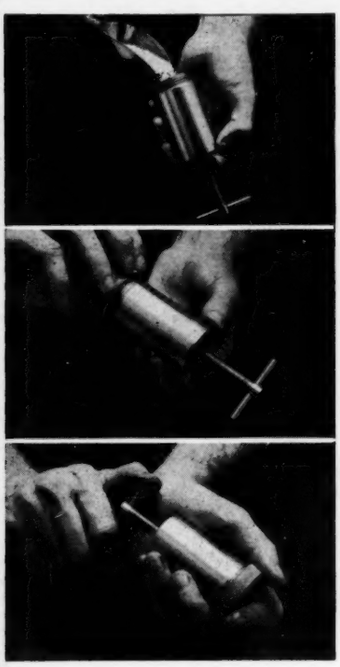
When the farmer rents equipment from Kennedy & Kuhn he does not go through the usual soul-searching interview that a city person does in regard to place of employment and other references. The Kennedy & Kuhn staff knows almost every farmer in the area, and the rentals are charged to the customer at time of delivery. New farmers, however, are required to show proof of residence.

"We find that renting this farm equipment is a means of getting new customers, too," reports Mr. Kuhn. "The farm grapevine spreads the word that we have machines for rent. Often a new farmer will come in and say he heard about our rentals from a neighbor."



WALTER KENNEDY, above, **of Kennedy & Kuhn Co., Van Wert, Ohio, is in favor of signs to advertise the fact that the firm rents equipment at nominal fees.**

CAKING PROBLEMS FOR GOOD!



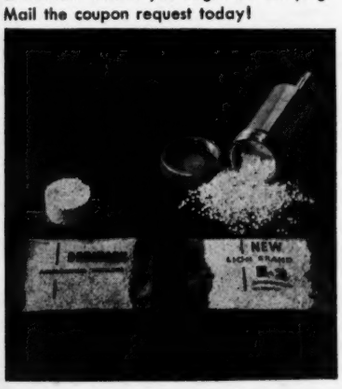
HOW TESTS WERE MADE . . .

1. Steel compression chamber is filled with prilled ammonium nitrate.

2. Steel cap closes chamber.

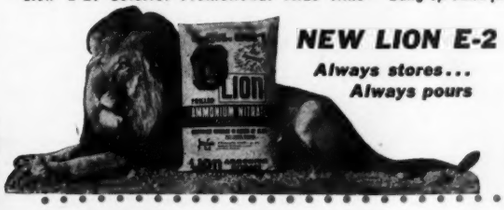
3. Pressure up to 600 lbs. per sq. inch is applied by turning T-bar.

4. See Lion E-2 tested in your own store . . . compare results with any other ammonium nitrate you might be carrying. Mail the coupon request today!



CONVINCING ADVERTISING AND STORE PROMOTION NOW BUILDING FARMER INTEREST IN LION E-2

Eye-catching, hard-selling advertisements in FARM JOURNAL, CAPPER'S FARMER, PROGRESSIVE FARMER, FARM AND RANCH are backed up by state farm publications, local county newspapers. Your customers will be reading about, asking about Lion E-2. **Colorful Promotional Aids Hike Volume.** Window and wall banners . . . facsimile bag cutouts to hang from the ceiling . . . full-color framed bulletin board . . . literature and sample dispenser for your counter . . . ad mats for your local use . . . all designed to help you do a bang-up sales job on new Lion E-2.



NEW LION E-2

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Always pours

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Inorganic Chemicals Division
Dept. CL-1, St. Louis 66, Missouri

☐ Please send free copy of "The Lion E-2 Brand Story"
☐ I would like to see Lion E-2 demonstration
☐ I am now handling Lion E-2
☐ I am not now handling Lion E-2

Name _____

Firm Name _____

Street or R. R. No. _____

City or County _____ **State** _____

NEW YORK

(Continued from page 9)

were for cash, and the rest were financed through the Dairyman's League organization. Bulk milk tank installations run from $3,200 for a 400 gal. bulk tank setup and upward. Now that New York dairymen are getting interested in pipeline milking systems, too, Mr. Haas will follow up his bulk tank customer sales with pipeline suggestions.

"I've got plenty of work for my outside salesman with these lines," says Mr. Haas, "and I also spend much time in the field myself, helping him.

"Then the service man has ample work for refrigeration, appliance and TV service, plus the bulk milk tank installations.

"In the service department, the men have regular IH service. I also buy used farm equipment, have the shop recondition and paint it and resell it."

The service department also handles service and repairs for the firm's industrial equipment rental service.

"Operating and servicing industrial equipment really furnishes my service shop with a great deal of work many months of the year," says Mr. Haas. "We even take individual jobs in the area for bull dozing when we have time. Because of this industrial equipment we have as many as four men in the service department some months."

Mr. Haas uses a very good sales device when a chain saw prospect wants a demonstration. He has two hardwood logs out on his front lot, and an employee takes a saw out there and cuts three quarters through the log. This usually shows the prospect what such a saw will do. One log will serve for many chain saw cutting demonstrations, as the cuts can be made every six inches if they are only three quarters through the log.

"We like to make these demonstrations, too, out where the heavy highway traffic can spot us," says Mr. Haas. "We've picked up prospects that way who later bought chain saws."

The modern farmer has a comfortable home, too, states Mr. Haas, and this gives him an opportunity to sell appliances and TV sets to many of his regular farm machinery customers. Sales of refrigerators, washing machines, TV sets and farm freezers are sizable. He usually averages about 100 major unit sales annually from his area.

"The farm woman wants these appliances in her home and why shouldn't she get them from us?" says Mr. Haas. "We know these people and they know us, and our service setup is permanent. Customers know they can get 24-hour-a-day service from us if they need it. That means a great deal to them."

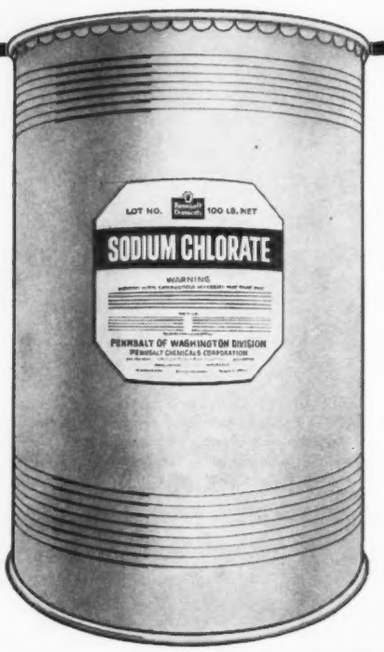
Many of Mr. Haas' customers are dairy farmers. In New York state these farmers are generally very efficient, and they make excellent use of land and forage crops. Consequently, they have sizable, regular milk checks. That's another reason why Mr. Haas carries the many lines that he does.

He says, "Farmers with regular milk checks can buy in winter just as well as in summer, for money comes in 12 times a year, not once or twice as is the case with crop farmers. We find that whether a farmer comes into our store to talk about buying a bulk milk tank or to buy insecticides or sprayers, he likes to walk around and inspect the rest of the merchandise we have in stock. That usually means we can sell him additional items—which is what we like."

For hard to kill weeds-
use the "Old Proven Standby"

PENNSALT

SODIUM CHLORATE

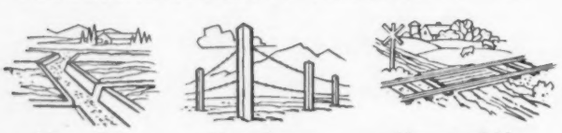


Packed in 100 lb. steel containers.

Sodium Chlorate is the *time-proven* herbicide to control those hard-to-kill, deep-rooted perennials. When used properly, it destroys *both* tops and roots of all plants including weeds and grasses. Heavy applications may prevent plant growth for a *year or more.*

KILLS Bindweed, Canadian Thistle, Hoary Cress, Leafy Spurge, Russian Knapweed, Bermuda Grass, Quack Grass and many other perennial weeds and grasses.

FOR POSITIVE CONTROL OF WEEDS AND GRASSES



Along ditches and canals — Along fences — Along roadsides and rights-of-way.

IN THE MIDWEST—write or telephone for free bulletin No. A-8 to the PENNSALT CHEMICALS Northern Agricultural Chemicals office, 309 Graham Building, Aurora, Illinois. Phone Aurora 6-8545.

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ESTABLISHED 1850

Phosphorus, Nitrogen Combination Called Best For Pasture Fertilizing

SAN FRANCISCO — "Phosphorus feeds clovers, while nitrogen feeds grasses, but a combination of nitrogen and phosphorus makes the best fertilizer application for pastures," according to Dr. W. E. Martin, soils expert for the University of California.

Dr. Martin was making recommendations for good fertilizer practices on irrigated pasture in California.

He cited the results of test plots in Sacramento County which demonstrated that a plot treated with 180 lb. of nitrogen and 160 lb. of available phosphate (P_2O_5) an acre produced a yield of 44,358 lb. of green forage an acre, while an unfertilized plot produced only 26,004 lb. of green forage. This meant an additional 3,591 lb. of dry feed an acre from the fertilized plot.

Dr. Martin pointed out that even when applying the highest costing combination of fertilizers, such as 200 lb. of nitrogen and 80 lb. of available phosphate an acre, there can still be a gain of $10 to $20 an acre in terms of additional beef produced.

Dr. Martin's recommendations for good fertilization of irrigated permanent pasture are as follows:

"Approximately 120 lb. available phosphate should be applied to new pastures or pastures not previously fertilized for the first year, then followed each year afterward with an additional 60 lb. an acre to keep the level at the 120 lb. phosphate mark. The application should be made just before rains in fall or early spring. Nitrogen should be applied, beginning in June, and 30 lb. an acre added at each irrigation, or the whole process of nitrogen fertilization can be done through irrigation water, sprinkler or flood, using 11 lb. for each 4 in. of water applied at each irrigation during the summer to get a total of 180 lb. of nitrogen on the field during the season."

Pine Tree Damage

MANHATTAN, KANSAS — Severe pine tree damage has occurred this spring in Johnson and Riley counties and on the Kansas State University campus in Manhattan, a K-State plant pathologist reported.

Some trees may die as the result of two diseases, according to Claude L. King of the K-State extension service staff. One disease kills the ends of the twigs and spreads backward down the twig from an inch up to a whole limb. Another disease spots and girdles green needles, killing portions or whole needles.

Not just one but two Spencer Nitrogens—Spencer "Mr. N" Ammonium Nitrate and Spencer 45 Urea—are now available in all-polyethylene plastic bags!

Mixers: Now sweeping the nation . . . going as fast as firecrackers on the 4th of July . . . a great packaging improvement and a big sales-booster for you and all the dealers you serve . . .

NOW - 2 Spencer Nitrogens In The NEW All-Polyethylene Bags!

WHEREVER Spencer Nitrogen is sold in the all-plastic bags, the report is that it sells faster. And no wonder! These amazing bags are so weather-proof, they can actually be stacked right out in the open to cut handling 50%.

After emptying, farmers re-use the bags in hundreds of ways around the farm: heat-sealed together, the empty bags make tarpaulins . . . "as is" they can be used to store seed or small tools, cover windows, insulate farm buildings, barns, sheds, etc.

So cash in on the growing demand for Spencer "Mr. N" Ammonium Nitrate and Spencer 45 Urea (45% Nitrogen) in the all-polyethylene plastic bags! (Both "Mr. N" and Spencer Urea are available in polyethylene-lined paper bags, too!)

Dealers: There's still plenty of corn plow-down and disk-in business in your area, and side-dressing time is close at hand! Figured on the basis of 200-lbs. of ammonium nitrate per acre, it only takes 150 acres of cornland to sell a 15-ton carload of Spencer "Mr. N" Ammonium Nitrate. Place your order now through your fertilizer manufacturer for another carload of Spencer "Mr. N."

SPENCER CHEMICAL COMPANY Dwight Building Kansas City, Missouri

FARM SERVICE DATA

Extension Station Reports

Nearly 1,200,000 soil test samples were processed through midwest state and county laboratories in 1957, reports the National Plant Food Institute, in summarizing statements by state extension agronomists and soil specialists.

"While this represents an increase of several hundred thousand over 1955 totals," says NPFI's midwest division, "soils tests are needed on a large percentage of midwestern farms.

"The benefit of soil testing is indicated by the fact that crop yields are about 40% above the average among midwestern farmers who have their soils tested and follow fertilizer recommendations of college agronomists."

A recent survey by NPFI indicates that farmers rate soil testing as the most important external influence on their fertilization practices. Nearly half of those who failed to have their soil tested blamed their own negligence.

"In view of this favorable attitude," says NPFI, "a vast expansion in soil testing would seem possible, provided sufficient additional effort is made to get farmers to take advantage of this valuable service."

An intensified soil fertility program, based on soil testing, can contribute substantially to the prosperity of farming communities in most areas of the Midwest, NPFI says.

★

Farmers benefit two ways from adding fertilizer to their crops, reports Alva Preston, University of Missouri extension soils specialist, in a statement summarized by the midwest division of the National Plant Food Institute:

(1) The plant food enables farmers to boost their business volume without buying additional land; (2) it helps them cut costs of crop production per acre and per unit.

Mr. Preston quotes a report by midwest land grant college agricultural economists to the effect that the present level of fertilizer use is very low in many Corn Belt areas. Additional applications of plant food can produce large response and higher rates of return.

"In view of the low price of fertilizer in relation to other items going into crop production," these economists say, "the farmer with a limited amount of capital should consider very seriously the economic advantage of applying fertilizer up to the point where returns are equal to those from alternative uses of capital.

"If you are in doubt as to just where that point is, it is better to apply a little more fertilizer than to put on too little.

"Not all of the plant nutrients are removed by a single crop. The residual effect on crops that follow is enough to pay the cost of the extra pounds of nutrients added."

The economists emphasize that fertilizer applied according to soil tests pays higher net returns than that applied to lower rates.

"Net returns are highest," they say, "when a unit of fertilizer will result in an increase in returns just equal to the cost of adding that unit."

★

Upper Michigan farmers growing small grains can get back nearly double the money spent on nitrogen fertilizer in one season.

Research at the Upper Peninsula Experiment Station at Chatham shows that farmers can get an increase in yield of 17 bu. for each 33 lb. of nitrogen fertilizer top-dressed immediately after the grain is planted.

The U.P. station is a unit of the Michigan Agricultural Experiment Station specializing on research on problems dealing with farm production in the Upper Peninsula.

S. M. King, agronomist and superintendent of the U.P. station, explains the return on the investment this way:

Thirty-three pounds of fertilizer, at 15¢ lb., cost $4.95. Adding $1 an acre to cover costs of spreading the material, brings expenses to $5.95 an acre.

The 17 bu. of extra yield at 60¢ bu. is $10.20 added income an acre. Net income is increased $4.25 an acre.

Mr. King used a lime spreader to put the nitrogen fertilizer on the soil.

At the recommended application rate of 25 to 35 lb. of nitrogen an acre, Mr. King says there is little or no danger from lodging.

★

Placing minor elements below the seed can reduce the amount needed over broadcasting.

Research on using fertilizers more profitably at the Michigan Agricultural Experiment Station shows that with onions, for example, 50 lb. of manganese an acre may be needed when broadcast. But only 10 lb. is needed when the material is placed in a band.

L. N. Shepherd, soil scientist at the station, says that manganese is often needed by row crops growing on alkaline soils.

Fertilizer Ups Corn Yield To 1,820 Bu. on 20 Acres

ATHENS, GA.—Gus Moore, Gordon County farmer, hit the jackpot in 1958 by producing 1,820 bu. of Tennessee 90 corn on 20 acres, according to John Gunnels, county agent.

Mr. Moore was initiated into the Georgia 1,000 Bushel Corn Club in March as a result of his accomplishment.

Mr. Gunnels said that Mr. Moore, in producing this yield, used 340 lb. of 4-12-12 and 40 lb. of actual nitrogen an acre. He planted his corn in 40-in. rows, spacing it 15 in. in the row. This gave him a stand of 10,400 plants an acre.

HIGH-K

MURIATE OF POTASH for the PLANT FOOD INDUSTRY

THIS symbol stands for high-grade uniform, coarse and granular Muriate of Potash (60% K_2O minimum). Southwest Potash Corporation provides a dependable supply of HIGH-K* Muriate for the plant food industry.

*Trade Mark

Southwest Potash Corporation

61 BROADWAY • NEW YORK 6, N. Y.

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

The era of the self-sufficient farm is over. In Texas alone, extension service economists say, farmers and ranchmen annually go to their dealers for about $59 million worth of machinery; $106 million worth of petroleum products; spend $44 million for construction materials; $18 million for pesticides; $31 million for lime and commercial fertilizers; $221 million for feed, and about $884 million for other goods and services.

According to John McHaney, extension economist at Texas A&M College, about 40% of the state's population is engaged in agricultural production, in supplying machinery and other farm and ranch needs or in processing and distributing farm and ranch products.

Eleven percent of those engaged in agriculture in Texas are classed as suppliers and 18% process and distribute farm products. In 1940 the suppliers made up only 4% of the picture and processors and distributors only 7%.

"This shift is of great importance," says Mr. McHaney, "for it means that others are now doing jobs which once were performed in a large measure by the producer. It has added efficiency to the industry and permitted the producer to concentrate on production."

In 1940, the average farm in Texas consisted of 367 acres. Today's farm contains more than 500 acres and represents thousands of dollars invested in capital operations. Farmers are buying more items in town and marketing more agricultural products than ever before, the economist says, but it must be remembered that costs are also much higher.

New Wisconsin Firm Seeking Site for Fertilizer Plant

MILWAUKEE — Agricultural Chemicals, Inc., a newly organized firm, was seeking a southeastern Wisconsin site for a new fertilizer plant.

R. P. Koos, Kenosha, slated to be president and treasurer of the company, said a number of locations served by highway and railroad facilities were being considered, and that the firm was seeking an area which could supply 30 to 50 men for unskilled labor. Mr. Koos is a former president and treasurer of N. S. Koos & Son, a Kenosha fertilizer firm.

The firm is capitalized at $750,000, and its incorporators and stockholders include men in the feed business, food processing industry and agriculture, who already sell or use plant food. The proposed plant is scheduled to produce 40,000 tons of granular plant food by next spring.

Firm Undecided on Fertilizer Plant Site

KELLOGG, IDAHO—The Bunker Hill Co. still hasn't decided whether to build its $10 million fertilizer plant here or at Kennewick, Wash., John Bradley, president, announced. "With one possible exception, the economics are in favor of Kellogg," he added.

"The exception has to do with gypsum which comes off as a by-product in the contemplated operation," Mr. Bradley said.

"In Kellogg we can rather conveniently dispose of the gypsum physically, but there appears to be little likelihood of disposing of it profitably for agricultural or industrial use.

"At the site on the Columbia River near Kennewick, we may be able to market the gypsum at a price which will outweigh the freight and operating advantages here."

The company, whose major mining operations are located here, announced plans to build the plant last year and took an option on an industrial site near Kennewick.

S. B. Penick Announces Staff Appointments, Changes

NEW YORK — Following on the heels of a recent realignment of sales and service divisions, S. B. Penick & Co., here announced the following appointments:

Barclay E. Mackinnon, former vice president of the New York Quinine & Chemical Works, Inc., is now vice president in charge of the new NYQ chemical division.

Harold A. Meyer, vice president, is now in charge of the botanical and allied products division, with William W. Bell, vice president, as assistant manager.

Frank Seeland, vice president, continues as manager of the new farm chemical and insecticide division.

Rudy P. Neptun, former New York Quinine & Chemical Works, Inc., vice president, is now vice president in sales development and promotion.

William A. Thawley, former sales manager of New York Quinine & Chemical, is now director of sales coordination.

James J. Verde, former assistant sales manager of New York Quinine & Chemical, is now sales manager for the NYQ chemical division.

Paper Firm Hosts Dinner, Film Showing

MINNEAPOLIS — The West Virginia Pulp & Paper Co. entertained some 60 guests at a dinner at the Minneapolis Athletic Club. A kinescope of the closed television broadcast from Charleston, S.C. to the recent National Packaging Forum in Chicago was shown following dinner.

The film described the process for making Clupak stretchable paper from which Wonderwall bags are made. Also shown were laboratory procedures used to demonstrate the toughness of the paper.

Tom Jones, regional general sales manager of the company's multiwall bag division, New York, said that Clupak has demonstrated that bags made from it "will withstand two to three times more punishment than comparable bags made of regular kraft paper."

Partial Victory Gained In Freight Rate Battle

SALEM, ORE.—Oregon limestone users have gained a partial victory in their request for lower freight rates from eastern and southern Oregon supplies, says Paul T. Rowell, state department of agriculture market development chief.

He explains recent rail rate reductions on lime did not bring substantial immediate changes. But the 1956 request of the Oregon Agricultural Lime Assn. for reduced freight rates did serve to hold up two general freight rate increases on lime during the 2½ years the matter has been before the Oregon public utilities commissioner.

Mr. Rowell says that when the commission decided the case recently, it allowed a rail freight reduction of around $1 a ton on single cars and 20¢ a ton on five-car lots. At the same time, it permitted the two general freight rate increases, held up during this investigation to go into effect.

Thomas C. Mooney, Jr., Named Calspray Salesman

RICHMOND, CAL.—The appointment of Thomas C. Mooney, Jr. as an agricultural sales representative for the California Spray-Chemical Corp. was recently announced by Dr. R. T. Wallace, district manager for the N.E. Atlantic area, with offices in Haddonfield, N.J.

Mr. Mooney's sales territory will include parts of Virginia and West Virginia.

Prior to joining Calspray, Mr. Mooney was engaged in experimental research work at the New York Agricultural Experiment Station in Fredonia.

A native of Laconia, N.H., he attended the U.S. Coast Guard Academy, Tufts University, and received his B.S. degree in chemistry and biology from Pennsylvania State University.

Fertilizer Trials Set In Oregon County

CONDON, ORE. — Howard Cushman, soil conservation specialist at Oregon State College, assisted N. C. Anderson, Morrow county agent, in establishing fertilizer trials to determine deficiencies other than nitrogen in several crops in the county on both dry land and irrigated land.

These are trials requested to be carried out by the farm crops and conservation and land use committee of the 1958 town and county planning conference. Minor elements and soil amendments are being used. Gypsum has been applied on dry land to determine sulphur deficiencies and as an amendment for "slick spots."

Monthly Inorganic Chemical Production Totals Released

WASHINGTON — The Bureau of the Census, U.S. Department of Commerce, reported that during February, 1959 production of synthetic anhydrous ammonia amounted to 326,454 short tons.

Other production figures of inorganic chemicals which were released include: ammonium nitrate solution, 216,428 short tons; nitric acid, 240,969 short tons; phosphoric acid, 145,635 short tons, and sulfuric acid, 1,406,287 short tons.

Colorado Research Project Gets Additional Finances

FT. COLLINS, COLO. — Three more companies will participate in a Colorado State University research project on the use of weed and fungus-killing chemicals, and plant growth regulating materials.

Under terms of contracts negotiated with the companies by the Colorado State University Research Foundation, the botany and plant pathology section of the Colorado Agricultural Experiment Station will conduct the research.

First contract for the project, announced recently, was with Balcom Industries, Inc. of Greeley, for $350. The three other participating firms and the amounts they have allocated for the work include Diamond Alkali Co., Cleveland, Ohio, $350; California Spray-Chemical Corp., Richmond, Cal., $350; and Eli Lilly & Co., Greenfield, Ind., $500.

Project leader for the one-year research program is Jess L. Fults, chief botanist and plant pathologist with the CSU experiment station.

Chemical Employment Drops in Delaware

WILMINGTON, DEL. — Employment in chemical manufacturing declined in Delaware during February. The new level was estimated at 25,800 as compared with 26,100 in January, according to the monthly report of the Delaware Unemployment Compensation Commission.

The figure remained below February a year ago when the number of workers was 27,100.

Average weekly earnings of the production worker increased between January and February from $121.10 to $122.18. A decrease was noted in average hourly earnings, $3.02 in January and $2.98 in February, and a longer work week from 40.1 hours to 41.0.

MY FERTILIZER SALES INCREASED 55%

"I have set myself up on quality . . . quality mixed fertilizer and a quality nitrogen . . . John Deere Vitrea. For me, quality and service offer the best approach to selling fertilizer. It gets me out of the rat race of price cutting . . . makes me more profit.

"Quality products bring me more repeat business and at the same time many new customers. This past season my fertilizer sales were up 55%.

"Our soil testing, mapping, farm planning and other services help get customers on a good program . . . once they are on such a program they stay *good* customers.

"Some of the things I particularly like about handling Vitrea is the excellent service I get on deliveries — furthermore I know I can consistently depend on getting highest quality. And too, Vitrea bags always arrive in good shape with less breakage than other types I have previously handled.

"You can bet Vitrea will play a big part in my profit picture again this year."

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BOSWELL, IND.

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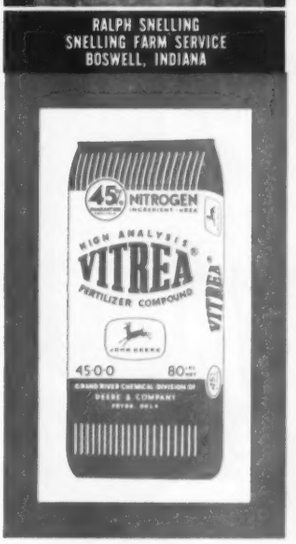
BOSWELL, INDIANA



With **John Deere** ViTREA — 45% nitrogen from urea — you can depend on getting the quality and service that is sure to please your customers and boost your profits.

TODAY, ViTREA IS A BETTER BUY THAN EVER!
ORDER NOW!

Grand River Chemical Division of DEERE & COMPANY

NPFI Grants $2,500 For Study on Who Makes Decisions

WASHINGTON—A study to determine who makes the decisions about using fertilizer on California farms is now underway at the University of California through a $2,500 grant from the National Plant Food Institute.

The study is being conducted at Davis by two University research workers, Luverne Donker and Douglas Kleist, under the direction of Dr. Orville Thompson, department of education.

"Results of this study should have significant implications to the fertilizer industry, as well as to University extension workers and farmers," said Dr. Richard B. Bahme, NPFI western regional director.

"It is important," he continued, "to know whether the farmer makes the decision to use fertilizer or whether he depends mainly on consultants and field men to determine the decision. When there is information available from fertilizer demonstration plots, for example, it is vital to know through whom this information can best be brought to the attention of the farmer."

Central Farmers Fertilizer Names Market Director

CHICAGO—Central Farmers Fertilizer Co. has named Bob Garn director of marketing. He will be in charge of all product movement and any technical service required in connection with products.

Mr. Garn comes to Central Farmers from Farm Bureau Cooperative Assn. of Columbus, Ohio. In his old position he had been manager of chemical processing for the fertilizer divisions.

Forest Research Laboratory To Be Built in Mississippi

GULFPORT, MISS.—Contract for the construction of a new forest research laboratory at Gulfport has been awarded and work on the project will get underway this month.

The two-story structure will be located at 34th St. and 20th Ave., and will contain modern facilities for research in forest genetics, and into the life histories and controls of insects and diseases that are pests of southern forests and their products. Total floor space will be about 19,000 sq. ft.

The building will house the Southern institute of forest genetics, the forest insect laboratory and the forest disease laboratory. The laboratory will be part of the forest service research facilities operating in the midsouth under the U.S. Department of Agriculture. Target date for completion is spring of 1960.

THE LINE RIDER AND HIS GANG of Diamond Chemical killers are the most inexpensive hirelings you can find for rubbing out weeds and brush. Back in Ohio they saved their bosses $18.75 per highway mile per season.

Meet the gang:

FOR MIXED BRUSH—LINE RIDER LV-3D/3T, a 2-Ethyl Hexyl Ester formulation of 2,4-D and 2,4,5-T containing 3 pounds each of acid equivalent per gallon.

FOR MAPLES AND OAKS—LINE RIDER LV-6T, a 2-Ethyl Hexyl Ester formulation of 2,4,5-T containing 6 pounds of acid equivalent per gallon.

FOR AREAS ADJACENT TO SENSITIVE CROPS—LINE RIDER AMINE 22, alkyl amine salt formulation of 2,4-D and 2,4,5-T containing 2 pounds each of acid equivalent per gallon. Applied as a water-borne spray.

FOR SPECIAL CONDITIONS—Also available are other standard LINE RIDER formulations, including Butyl and Low Volatile Esters of 2,4-D and 2,4,5-T containing 4 pounds acid equivalent per gallon.

If you want deadly marksmanship, send for new LINE RIDER brochure giving details. Write Diamond Alkali Company, 300 Union Commerce Building, Cleveland 14, Ohio.

Diamond Chemicals

Oregon Bureau Plans Land Rehabilitation

PORTLAND, ORE.—The Department of Interior's bureau of land management has announced plans to rehabilitate 12,500,000 acres of public domain range land in eastern and central Oregon.

Improvements will be made under revisions of a 20-year soil and moisture conservation program.

Virgil T. Heath, the bureau's state supervisor here, says production of forage on the lands will be approximately doubled when the program is completed.

The program includes land treatment and structural improvements designed to retard surface runoff, make efficient use of available moisture, stop erosion through soil stabilization and increase production of range forage to provide for full multiple use of the land.

Mr. Heath said priority will be given those areas where effective range management has been attained and livestock numbers are balanced with carrying capacity of the range.

Past improvement projects show considerable progress to date, Mr. Heath said, including 15,000 acres treated for brush control, 132,162 acres reseeded to range grasses, 1,810 miles of range fence built, 1,534 livestock and wildlife watering reservoirs constructed and 374 springs and 112 wells developed.

Under the 20-year program the bureau intends to eradicate sagebrush on better grass areas through aerial spraying of herbicides.

Scientists Isolate Leaf Blight Fungus

DAVIS, CAL.—Plant pathologists of the University of California, Davis, have isolated the fungus that causes leaf blight disease in almonds.

The disease can reduce almond production over a period of years by causing leaves to wilt and die, or immediately by killing flowers and buds. In some particularly susceptible varieties it can destroy up to 20% of the leaves during the growing season.

Joseph M. Ogawa, E. E. Wilson, and Harley English, plant pathologists, have worked on the disease since 1955. They report that early symptoms of the disease include the withering of unopened flowers shortly after they emerge in the spring, or the withering of leaves some time in June. In 1956, blossom blighting in the Peerless variety was noticeable by mid-March.

The blight can be controlled either by protective fungicides in the spring, or by eradicative sprays in late winter, the researchers say.

Missouri Fertilizer Use Drops in '58

COLUMBIA, MO.—Missouri farmers used nearly 791,000 tons of fertilizer during 1958, says W. L. Baker, supervisor of the fertilizer inspection service at the University of Missouri.

This total was 10,000 tons below the 1957 use of 801,000 tons, he says. Even so, it more than doubled the 355,000 tons used 10 years before in 1948.

In addition, the percent of plant food in a ton of mixed fertilizer was considerably higher in 1958 than 10 years earlier. Last year, plant food content in a ton of fertilizer was 35% as compared to 21% in 1948.

The 35% average for plant food content is an all-time high in mixed fertilizers, Mr. Baker says. The trend to higher analysis grades of fertilizer is expected to continue.

The movement of fertilizers in bulk continued to increase in 1958. The tonnage of bulk rock phosphate used was up 9%, other bulk dry fertilizers had an increase of 52%, and the use of liquid mixed fertilizers was up 29% from the amount reported in 1957.

California Fertilizer Group Elects New Officer, Directors

SAN MARINO, CAL.—Demont W. Galbraith of Woodland, Cal., was recently elected vice president of the California Fertilizer Assn., to fill out the term of M. M. Stockman, San Francisco, who resigned. At the same time, L. M. Roberts, San Francisco, was elected to serve out Mr. Stockman's term on the board of directors, and John Parker, Fresno, was elected to the board to replace Frank A. Easton, Fresno, deceased.

Mr. Galbraith is president of Agriform of Northern California, Inc. Mr. Roberts is general manager of the ammonia division, Shell Chemical Corp. Mr. Parker is manager of Fresno Agricultural Chemicals Co.

Mr. Stockman resigned as vice president and from the board of directors on March 31, 1959, when his concern, The Mountain Copper Co., Ltd., ended its operations in commercial fertilizers.

Howard H. Hawkins, Golden State Plant Food Co., Glendora, continues as president of the association.

Soil Survey Completed on 4 Million Oregon Acres

PORTLAND, ORE.—The U.S. Department of Agriculture soil conservation service disclosed that it has completed soil surveys on almost 4,000,000 acres, mostly cropland, in Oregon.

But the agency has just begun. It still has more than 38,000,000 acres left to survey.

Soil specialists hope to examine and map almost 1,000,000 acres this year and publish reports on Prineville, Tillamook and Curry County areas.

A survey of the Deschutes area recently was completed, an official said, and a report should be published soon.

The project, which started about five years ago, involves making new surveys and updating old ones. Almost 6,000,000 acres remain in the latter category.

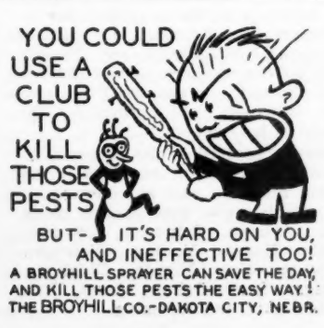
Purpose of the surveys, a USDA official said, is to ensure the best use and management of the land, whether from the standpoints of farming, engineering or conservation.

Fertilization on Leafy Vegetables to be Studied

TIFTON, GA.—Fertilization is one of the important phases of research planned for an expanded program on leafy vegetables at Georgia Coastal Plain Experimental Station in Tifton.

Donald A. Hegwood, who received his B.S. and M.S. degrees at Mississippi State College, has been employed by the horticulture department of the station to work on the leafy vegetables research. He will conduct tests under supervision of O. J. Woodard, head of the horticulture department.

Some research has been done on leafy vegetables at the station for some time, but this is the first time a full-time worker has been placed on this project. In addition to fertilization, such subjects as varieties, planting, cultivation, and others will


YOU COULD USE A CLUB TO KILL THOSE PESTS
BUT- IT'S HARD ON YOU, AND INEFFECTIVE TOO!
A BROYHILL SPRAYER CAN SAVE THE DAY, AND KILL THOSE PESTS THE EASY WAY!
THE BROYHILL CO.-DAKOTA CITY, NEBR.

250 Attend New York Petroleum Council Luncheon

ITHACA, N.Y.—One of the big jobs in agricultural research is to assist the farmer by means of chemicals to combat the vagaries of climate, more than 250 New York State farm leaders were told at a luncheon of the New York State Petroleum Council, held at Cornell University.

Max T. Goebel, director of the research division of the du Pont Co.'s Grasselli chemicals department, Wilmington, Del., said that plant growth retardants, stimulants, chemicals to render plants drouth-resistant, to increase root growth, are among projects chemists are working on.

Dr. Goebel told county agricultural agents and farmers attending that the petroleum industry and the farm implement industry are doing more and more to help the farmer harvest his crop fast when unfavorable climatic conditions threaten.

"In our research, we constantly keep in mind this basic matter of farm investment. Research cannot be a success for the industry it serves unless an even greater benefit accrues to the customer. The chemical industry, the petroleum industry, the farm implement industry and all the other industries which deal so directly with the farmer and his problems are fully aware of the basic cooperation he needs, and we will do our best to provide it," Dr. Goebel said.

Special guests at the dinner included three dairymen who have been chosen by the New York State Junior Chamber of Commerce as top young farmers in the state. They are Raymond C. Vail, LaGrangeville, selected as first-place winner; Jack B. Zwart, Washingtonville, second, and William A. Walldroff, LaFargeville, third.

Southern Fertilizer Group Reveals Meeting Plans

RICHMOND, VA.—Program plans for the 17th annual meeting of the Association of Southern Feed and Fertilizer Control Officials, to be held at the Velda Rose Motel in Hot Springs, Ark., June 9-10, were announced by Maurice Rowe, secretary-treasurer.

Discussions on pesticides, fertilizer, soil test programs, insect controls and fertilizer - insecticide mixtures will highlight the affair.

AGRONOMY CHIEF RETIRES

COLLEGE STATION, TEXAS—Dr. E. B. Reynolds, chief of the agronomy department of Texas A&M and the Texas Agricultural Experiment Station, is retiring. He has been with the department since 1915, and during that time has worked in the special field of soil science and soil microbiology.

To Mr. James Judah of Columbia, Missouri

"Mathieson means more *profitable farming*"

Mr. Judah's yearly harvests average: 60 bushels of wheat . . . 95 bushels of corn . . . 120 bushels of milo. He farms over 400 acres, double cropping much of his land—corn and milo after barley and oats silage. His basic program—160 acres watered with a Mathieson portable irrigation system . . . high-analysis AMMO-PHOS fertilizers . . . Mathieson pesticides.

Mr. Judah used to be a fertilizer dealer before he became a full-time farmer. "I still have something of a competitor's respect for Mathieson products," he says. "Mathieson quality is the important factor, and the men behind the products mean a lot too. My Mathieson dealer is well informed and helpful. The Mathieson field representative and agronomist here are always ready with sound professional help on technical problems."

It's the same everywhere, from the tobacco lands of the Carolinas to the truck farms of California's Imperial Valley . . . from the Dakota's Red River to the Rio Grande . . . for thousands of the nation's progressive farmers as well as Mr. Judah—Mathieson truly means more profitable farming.

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Research in the News

A Purdue University-U.S. Department of Agriculture small grain breeding team averaged oat yields of 131 bu. an acre and oat silage yields of 19 tons an acre in 1958 experiments at the university's nearby agronomy farm. The 1958 average Indiana oat yield was 51 bu. an acre.

The team, composed of F. L. Patterson, R. M. Caldwell, L. E. Compton and J. F. Schafer, has been studying forage and grain yields of spring oats for three years. The first two years experimentation concerned forage yields at the soft dough stage for different rates of planting. Emphasis last year was placed on determining yield of forages at various stages of plant development.

Prior to seeding last April 3, 175 lb. of 12-52-0 analysis fertilizer an acre was applied. Ideal oats growing weather followed. June was much cooler and wetter than normal for Indiana, and the fruiting period (flowering to maturity) was nearly a week longer than the normal four-week period.

The scientists found that highest forage yield came at the soft dough stage. Smallest yields of silage resulted when the oats were harvested at the preboot stage—about 10 days before the oats head. Excellent forage yields, ranging from 16.6 to 22.7 tons an acre, were obtained from all varieties.

●

The little alien that hitchhiked its way from the South on board peanut hulls to a cucumber greenhouse near Cleveland has apparently been banished for good.

Dr. Ralph Neiswander, entomologist at the Ohio Agricultural Experiment Station, reports no traces of the cucumber mite have been found since his recommendation has been carried out. The greenhouse owner sprayed with a insecticide known as Kelthane which effectively eliminated the tiny mite.

Mr. Neiswander believes the cucumber mite was confined to this solitary Berean greenhouse and does not pose a threat to Ohio's huge greenhouse business.

"The presence of the mite on these peanut hulls was pure accident and chances of growers getting infested hulls are very slim," he declares. For this reason, the entomologist doesn't discourage the use of these hulls which make excellent mulching material.

●

American farmers pay out about one billion dollars annually in crop losses to plant parasitic micro-organisms in the soil.

A big share of this damage is done by plant nematodes, and the control of these came in for special attention at a Farmers' Week session in East Lansing, Mich., recently. J. H. Davidson, of the Dow Chemical Co., spoke to growers attending a muck farmers session.

One of the problems about the losses caused by the nematodes, Mr. Davidson told the farmers, is that the presence is frequently not detected because of their microscopic size. And of all the species of nematodes in the soil, only 25 or 30 are harmful.

One of the early symptoms of nematode damage is poor top growth, which might look like a nutrient deficiency, according to Mr. Davidson.

Intense cultivation makes the problem more important. Long term rotations help to control the nematodes, he said.

Several chemicals are available for treating soil to control parasitic nematodes, Mr. Davidson noted. Side dressings of some of the material around certain growing crops have shown considerable promise, he said.

Good performance from the soil fumigation requires several procedures, he said, including tillage, leveling and compacting, and an exposure period of two weeks during which the soil is left undisturbed.

Muck soils require high amounts of fumigant, he noted.

●

Use of starter solutions to stimulate freshly transplanted vegetables in cold soil is perhaps one of the cheapest and easiest methods of obtaining an extra 20 to 30% increase in vegetable yields.

Starter solutions provide readily available nutrients to transplants in the root zone. Benefits from use of such a solution may be expected from field-transplanting crops such as sweet potatoes, peppers, tomatoes, cabbage and others. Some of the benefits derived are earlier, maturity, higher quality and greater yields.

The Texas Agricultural Extension Service has published a leaflet entitled "Starter Solutions for Vegetable Transplants." It was prepared by three horticulturists of the Texas A&M College System.

Completely water soluble, high-analysis fertilizers containing nitrogen, phosphate and potash are recommended in preference to low-analysis mixtures. Low-analysis materials contain insoluble filler which frequently clogs mechanical plant setters.

Blue Mold, Other Diseases Found in North Carolina

RALEIGH, N.C. — Blue mold has been found in a number of North Carolina counties, according to the Plant Disease Survey, U.S. Department of Agriculture. Counties in which the disease has been found and identified are: Robeson, Pamlico, Nash, Columbus, Sampson, and Johnston. The disease has been reported as far west as Johnston County on a farm near Princeton, located 25 miles east of Raleigh.

Damage caused by blue mold might be described as very slight thus far. All reports have been based on scattered spots in beds.

Several beds were checked in Lenoir and Jones Counties on April 16. Four beds were checked where no fungicide treatment had been used. The plants on these beds were almost transplant size. No sign of blue mold was observed.

Anthracnose has not been reported as yet. Damping off has been reported in several beds and causing some damage.

Weather conditions were not favorable for spread and development of blue mold and anthracnose prior to the week of April 12. However, weather conditions have been favorable since Sunday, April 12. Some increase in disease development is expected following this period of favorable weather.

Dowpon Factory to be Built in England

MIDLAND, MICH. — Dow Agrochemicals, Ltd., will build a factory in King's Lynn, Norfolk, England, to manufacture Dowpon under license from the Dow Chemical Co.

The British company, organized to manufacture and market Dowpon in the British Commonwealth, announced that an industrial development certificate has been received from the Board of Trade to complete the first step in the project.

A dock-side site covering 66 acres has been acquired and an immediate start will be made upon construction of the factory. Initial investment will be in the neighborhood of $2,000,000.

JOIN AIRCRAFT GROUP

FRESNO, CAL.—Four new agricultural aircraft firms have become members of the California Agricultural Aircraft Assn., Inc. The new members include: Larson Air Service, Richvale, represented by Blaine Larson; Butte Flying Service, Biggs, represented by John Stanley; Jackson's Dusters, San Jose, represented by Wayne Clevenger; Brady-Vossler Flying Service, Inc., Porterville, George Brady, vice president.

FARM INCOME

(Continued from page 1)

in recent months in contrast to the rise this time last year. They now average lower than a year earlier and may continue lower the rest of 1959.

An increased volume of farm marketings probably will maintain farm cash receipts at the 1958 level, AMS said, even though prices received average lower. Receipts from wheat may be down appreciably, since prospects point to a 200 million bu. reduction from last year in winter wheat production. Receipts from cotton may be up substantially because of increased acreage.

Hog receipts probably will be down because of lower prices, but receipts for cattle may be up because of slightly higher prices. A slight gain in receipts from dairy products is expected.

Even though cash receipts are likely to be maintained at about the 1958 level, a sharp reduction in Soil Bank payments, due to termination of the acreage reserve, is likely to bring a reduction in gross farm income. Last year, farmers received $693 million from acreage reserve payments. Payments under the conservation reserve, which is being expanded this year, amounted to $122 million in 1958.

Production expenses of farmers will increase again in 1959, as they have in 18 of the past 20 years. The increase will result from both higher prices being paid by farmers and increased quantities of goods purchased. Expenses for feed and for livestock purchased by farmers are rising as a result of expanding livestock operations. Farm wages and overhead costs—interest, taxes, and depreciation charges — are also higher than last year.

Lower government payments and higher production expenses are expected to reduce the net income realized by farm operators about a billion dollars from the $13.1 billion realized in 1958, but it will remain well above the 1957 figure of $10.8 billion. Part of the prospective decline in income from farming may be offset by increased farm family income from nonfarm sources as industrial wage rates and job opportunities for farm people continue to improve.

Cash receipts from farm marketings in the first quarter of 1959 were above the corresponding period a year earlier for the fifth consecutive quarter. The total of $7.3 billion was up 2% from the first three months of 1958. Most of the increase was accounted for by larger marketings. Prices averaged slightly lower. First quarter livestock receipts, estimated at $4.4 billion, were practically unchanged from 1958 as slightly lower average prices offset a larger volume of sales. Crop receipts of $2.9 billion were up about 5% from the first quarter of 1958, principally because of larger marketings of wheat and larger marketings together with higher prices of corn, oranges, and tobacco. Receipts from potatoes and sorghum grain were smaller than a year ago.

The preliminary estimate of farmers' cash receipts in March is $2.2 billion, down 1% from March, 1958. Livestock receipts for March, 1959 are estimated at $1.5 billion and crop receipts at $.7 billion.

The first quarter realized net income rate of $12.7 billion was only slightly lower than last year's fourth quarter rate of $12.8 billion. An increase in the production expense rate and lower government payments more than offset higher cash receipts from marketings on a seasonally adjusted basis. The increase in the production expense rate reflected higher prices of feed and feeder livestock in the first quarter, as well as higher interest payments and tax rates applicable to the new year, AMS concluded.

FORESTS

(Continued from page 1)

deleterious effects of high water tables;

(4) To determine if nutrient applications may be related to soil moisture availability in such a way that the effects of drouth may be overcome;

(5) To discover if hardwood control prior to fertilization releases sufficient soil water to make the addition of nutrients effective in sites where fertilizer otherwise may not stimulate growth;

(6) To outline root growth patterns of Southern pines in various soil types in order to specify where fertilizer should be applied in practice;

(7) To ascertain if foliar analytical sampling techniques can be useful for site evaluation in Southern forests. Some analytical work with pine needles is underway;

(8) To induce favorable auxin-nutrient interactions;

(9) To learn the recycling rate of plant nutrients in various forest soils;

(10) To determine causes of needle chloroses prevalent among the hard pines;

(11) To test the effectiveness of seed-tree nutrition on seed storage, and

(12) To reveal if wood quality is related to the nutrient status of Southern pines.

Dr. Walker pointed out that presently there are about 150 experiments under way on a wide variety of subjects, but that mostly they deal with growth responses of loblolly and slash pine plantations and the production of seed in orchards and seed production areas.

WATER

(Continued from page 1)

Service, USDA's Forest Service, and various other federal, state and local agencies and private interests.

Measurements are made on approximately 1,300 snow courses and 100 soil moisture stations. Amount of storage in nearly 250 reservoirs also is taken into account.

Seasonal snow accumulation ranged from a few areas of heavy snowpack near the Canadian border in Idaho and western Montana to widespread deficiencies for all of Arizona, New Mexico and Nevada and for the southern part of California, Colorado, Oregon and Utah, with the snowpack near normal for the areas in between.

States covered in the forecast, including states with irrigation water using areas as well as those states in which snow surveys are made, are: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming.

Dr. Arthur M. Smith

TO PROMOTE UREA—Dr. Arthur M. Smith has been named director of agricultural promotion and development for Mathieson urea. A. B. Verdery, general manager for Olin Mathieson's northeastern district agricultural chemical sales, said Dr. Smith will concentrate chiefly on the area from Michigan east, and down the eastern seaboard. Mathieson urea will be manufactured by the recently formed SunOlin Co., a jointly owned subsidiary of Olin Mathieson Chemical Corp. and Sun Oil Co. SunOlin is constructing a 73,000 ton-per-year urea plant at North Claymont, Del. to supply Olin Mathieson's requirements. Dr. Smith received his bachelor's degree from Pennsylvania State University and his master's degree and doctorate from the University of Maryland. His doctor's dissertation, completed in 1925, included technical details on the rate of availability of nitrogen from urea at a time when the chemical had limited use in this country. Before joining Olin Mathieson in 1948, Dr. Smith had been vice president and technical director of Synthetic Nitrogen Products Corp.

Turf Grass Association Organized in Virginia

BLACKSBURG, VA. — Formation of a Turf Grass Assn. for superintendents of parks and playgrounds, highway landscape engineers, golf course superintendents and others "professionally interested" in turf grass, has been announced.

The association will serve as an exchange of ideas, and will hold its first annual meeting at Virginia Polytechnic Institute here, probably in July. At that time, officers will be elected and plans made for future activities.

A committee has been named to draw up by-laws for the group and make plans for the summer meeting. Members are E. J. Keffer, chairman, Roanoke; James Furry, Pulaski; G. F. Wingo, Roanoke; Earl Spicer, Blacksburg; Marvin Giles, Lynchburg, and Ira J. Bosley, Waynesboro.

New Experiment Station Probes Irrigation Secrets

PECOS, TEXAS—One of Texas' newest experiment stations is now setting up experiments that may eventually solve many problems facing irrigation farmers in this area.

The new station is located 15 miles southwest of here, and at present comprises 160 acres of land and a new building. Superintendent of the station is Ernest Thaxton, who was transferred here from the Lubbock experiment station where he was an agricultural engineer.

Many of the tests will pertain to soils and water of this area. Soil testing, fertilizers, crop varieties and irrigation methods will all be included in the station's long range program.

Area's Fertilizer Use Up, But Still Lacking

LUBBOCK, TEXAS—Fertilizer usage on the south plains of Texas had increased from a half million dollars' worth five years ago to five million in 1958, according to Charles Fisher, superintendent of the Lubbock Experiment Station.

Yet the optimum has not been reached. If farmers used the recommended amount, cotton production would increase by 20%, to add nearly a quarter million more bales to the area's production. About two-thirds of the cotton is grown under irrigation, and all this crop could be fertilized profitably.

The educational and research program has not kept pace with fertilizer sales, and therefore maximum benefits were not achieved, according to Mr. Fisher.

To further this program, the South Plains Soil Fertility Committee is now trying to raise $15,000 to continue its research work. Tests will be conducted on 14 off-station locations in cooperation with the Texas Agricultural Extension Service and farmers on whose fields the fertilizer is used.

Gail Van Drasek Named To Geigy Sales Staff

YONKERS, N.Y. — Geigy Agricultural Chemicals, division of Geigy Chemical Corp., announces the appointment of Gail Van Drasek to its Michigan sales staff. Mr. Van Drasek will operate under the direction of George W. Hamilton, area sales representative.

Mr. Van Drasek was formerly employed by the Watervliet (Mich.) Fruit Exchange. Educated at Michigan State University, his training included studies in commercial fruit production. Mr. Van Drasek has also had considerable background in farming and experience in orchard management.

Dr. L. G. Utter Promoted by Diamond

PAINESVILLE, OHIO — Two appointments in Diamond Alkali Co.'s research department have been announced here by Dr. George F. Rugar, manager of product development.

Dr. L. G. Utter, technical service manager for agricultural chemicals since October, 1954, becomes assistant manager, agricultural chemicals, and F. L. Dailey, a development engineer in the product development department, is promoted to assistant manager, industrial chemicals.

Canadians Announce Dates For 1959 Fertilizer Meeting

TORONTO — The annual convention of the Canadian Fertilizer Assn. will be held Aug. 18-22 at Bigwin Inn, Lake of Bays, Ontario, announced A. Mooney, convention manager.

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Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

ACCENTUATE THE POSITIVE . . .

Results, Not Price, Should Be Stronger Selling Argument for Fertilizer Industry

THIS IS THE time of year when reports keep flitting around to the effect that so-and-so has lowered his fertilizer price, and the great race is on to not only meet that reduced figure, but perhaps to lower it still more to "get the business." The consequences are usually in the form of a nearly profitless season, with hopes that "next year" will be better.

There are arguments on both sides, of course. Cutting the selling price to meet a competitive figure must seem fully justified, or else there would not be so many playing the game.

Dr. Malcolm McVickar, chief agronomist at California Spray-Chemical Corp., in a recent talk before a group of Western fertilizer dealers covered this whole topic rather thoroughly. He said that if the industry persists in the direction it appears to be heading in the matter of price-cutting, "we have a fairly good chance of ending up at the poor house." He softened the grim prospect, however, by adding that the fertilizer industry people comprise a "great gang" and "I can't think of a better group to be with at the poor house."

On the serious side, the agronomist pointed out many reasons why it should not be necessary for anyone in the industry to be apprehensive about the future and its potential for fertilizer markets. The rising population; the disappearance of thousands of acres of rich land through urban encroachment, airports, parks, highways and suburbs, and the consequent need for greater production on the usable land all have a direct bearing on the picture.

"Our children and their children can thank the fertilizer industry, for without its product they would be faced with starvation," Dr. McVickar declared.

Here are some additional thoughts propounded by the agronomist, well worth reflecting upon during this active selling season:

"We have a product that should, even today, sell itself. In fact, fertilizers do not cost. Every time we deliver fertilizer to one of our farmer friends, we actually give him the fertilizer and put into his pocket an additional two or three dollars for every dollar of fertilizer delivered. In spite of the wonderful performance of our product, we, still as an industry, sell on price—not results.

"It is hard for me to believe that farmers are not more interested in results than they are in price. In my opinion, if our industry is to really become healthy, we must raise ourselves by our own bootstraps. We have a quality product and one that pays off for our customers. In the years ahead, its use in ever increasing amounts will be a must for successful operators.

"The decision is ours. Will we move forward or will we continue to take the path to the poor house and, on our way, cry out, 'Why don't farmers use the rates of fertilizer recommended by our college friends?'

"Every fertilizer and every fertilizer material has definite qualities that make that fertilizer superior to others when the particular fertilizer is used to capitalize on those qualities. We must, therefore, stop relying on our colleges to expand the market, and start selling results. The grower really wants profits—not low prices.

"Then why go out and ask a grower to let you know when your competitor quotes him a price and you will meet it—or perhaps even go lower? Go out with your head up, represent your company and its products and sell the customer on how to use your fertilizer to make him profits. A price cut may well mean a loss to your customer. A $20 difference per ton of anhydrous ammonia is equivalent to three pounds of cotton per acre. So, I say, we are missing the boat by not selling results. When you sell results, price becomes secondary! If we sell results, we will sell more fertilizer per acre than we ever dreamed of!

"It is not good economy to cut down on fertilizer usage just because we may not be absolutely sure of the optimum amount. 'Playing it safe' means going heavy, not light.

"There are other developments that can help us to raise ourselves by our bootstraps if we take advantage of them in a positive manner. These include the following:

1. Our food requirements are increasing.

2. Lands now in production are being taken out of production.

3. The number of farms is decreasing, and

4. The size of our farms is increasing.

"Our farm land is falling under the supervision of business type operations. The emphasis is on efficient production per unit of production and on quality. Fertilizers properly used are efficient production tools. Their proper use lowers unit production costs and increases quality. This quality can, to a considerable degree, give a 'built-in' production control. Quality products find a home when others go wanting."

The time may not be very far off when the increasing pressure of population will begin to show up in greater demand for food and fiber, with a natural upswing in fertilizer consumption. In the Western states alone, Dr. McVickar said, the population is expected to reach some 36 million by 1970. This is an increase of approximately 50% over the present numbers.

In order to feed this expected population about 10 years hence, agriculture will have to produce 100 million more pounds of beef; a billion additional pounds of sugar; 60 million additional bushels of wheat, and 150 million more pounds of tomatoes. Other food requirements are equally impressive.

What does this mean in terms of production of these foods? Dr. McVickar declares that the above needs will require the equivalent of 200,000 more steers; 17,000 more acres of sugar beets; 150,000 more acres of wheat and 400 more acres of tomatoes.

Superimpose these figures on the growth pattern in other parts of the U.S. and the conclusion is that demand for plant food will be greater soon.

It follows, too, that as greater investments are made in fertilizer, labor and other costs of raising crops, the employment of pesticides to protect these investments will be increased.

Then, maybe, the industry's products will be sold entirely on the basis of results, rather than on "how much is it a ton?"

Quote

"Increased use of fertilizer has played a major part in meeting production needs and in lowering unit production costs. The present level of use on many crops in many areas is below the level that would be most profitable for most farmers. Projected crop production needs can be met more economically through use of more fertilizer and fewer acres than are represented by the present fertilizer-land use ratio. For a fixed output, either for a farmer or for the nation as a whole, resource combinations that will reduce unit costs are economically desirable."—D. B. Ibach and R. C. Lindberg in USDA bulletin.

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Croplife

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NBP — *Member of National Business Publications*

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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DONALD NETH
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MEETING MEMOS

April 29-30 — Symposium on transportation, regulation and packaging of chemical products, sponsored by the Manufacturing Chemists' Assn., Engineering and Scientific Center, Cleveland, Ohio.

May 21—Chemical safety workshop sponsored by the Manufacturing Chemists' Assn., Palmer House, Chicago.

June 4—Executive committee meeting, fertilizer section, National Safety Council, Hotel Roanoke, Roanoke, Va.

June 9-10—Seventeenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Velda Rose Motel, Hot Springs, Ark.; Maurice Rowe, Virginia Department of Agriculture, 1122 State Office Bldg., Richmond 19, Va.

June 9-11—Pilot plant demonstration on recent developments in fertilizer production technology. Muscle Shoals laboratories, Sheffield, Ala.

June 11-13—87th annual meeting, Manufacturing Chemists' Assn., The Greenbrier, White Sulphur Springs, W.Va., John L. Gillis, vice president of Monsanto Chemical Co., program chairman.

June 14-17—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 15-18—Western Society of Soil Science, University of California, Davis, Cal.

June 23-25—Pacific Branch, Entomological Society of America, 43rd annual meeting, El Dorado Hotel, Sacramento, Cal. Dr. Leslie M. Smith, University of California, Davis, branch chairman.

June 27—Del-Mar-Va Peninsula Fertilizer Assn., Ocean City, Md.

June 29-30 Fertilizer Industry Conference, University of Illinois, Urbana, Ill.

June 29-30—Seventh Annual California Fertilizer Conference, University of California campus, Davis, Cal. J. H. Nelson and Earl R. Mog, co-chairmen.

July 7-9—Regional Fertilizer Conference, co-sponsored by the Pacific Northwest Plant Food Assn. and state colleges and universities in the area, Winthrop Hotel, Tacoma, Wash.

July 29—Annual Kentucky Fertilizer Conference, Guignol Theater, University of Kentucky campus, Lexington, Ky.

July 31—Agronomy Field Day, University of California, Davis, Cal.

Aug. 3-7—Gordon Research Conference on biochemistry in agriculture, Kimball Union Academy, Meriden, N.H.

Aug. 18-22—Annual Convention of the Canadian Fertilizer Assn., Bigwin Inn, Lake of Bays, Ontario.

Aug. 26-28—Soil Conservation Society of America, 14th Annual Meeting, Rapid City, S.D.

Oct. 13-14—Western Agricultural Chemicals Assn., fall meeting, Villa Motel, San Mateo, Cal., C. O. Barnard, executive secretary.

Oct. 14-16—Pacific Northwest Plant Food Assn. Annual Convention, Chinook Hotel, Yakima, Wash.

Oct. 21-23 — National Agricultural Chemicals Assn., 26th annual meeting, French Lick-Sheraton Hotel, French Lick, Ind., Lea S. Hitchner, executive secretary.

Nov. 4-6—Fertilizer Industry Round Table, Mayflower Hotel, Washington, D.C. Dr. Vincent Sauchelli, National Plant Food Institute, chairman.

Nov. 9-11 — California Fertilizer Assn., 36th annual convention, Fairmont Hotel, San Francisco.

Nov. 16-20 — National Aviation Trades Assn., 20th annual convention, New Orleans, La.

Dec. 9-11—International Crop Protection and Pest Control Exhibition, Seymour Hall, St. Marylebone, London, England.

Michigan Chemical Elects Board of Directors

SAINT LOUIS, MICH.—At the annual stockholders meeting of Michigan Chemical Corp. held here recently, the following members of the board of directors were re-elected: T. C. Davis; J. D. Frost, Frost, Blanchet & Co.; Arthur J. Fushman, president, Manufacturers National Bank of Detroit; Donald D. MacFarlane, attorney, Barbier, MacFarlane & Tolleson; Hugo W. Krave, vice president, Detroit Harbor Terminals, Inc.; Theodore Marvin, chairman of the board and president; J. H. McMullen, McMullen & Hard; William F. Mitchell, general manager, chemical division, General Mills, Inc.; Clyde H. Reeme, president, the Udylite Corp., and F. L. Van Lennep, executive vice president and treasurer, Castleton, Inc.

New members elected to the board are: Fred A. DeMaestri, vice president, and Sidney D. Kirkpatrick, editorial director of Chemical Week and Chemical Engineering and vice president of McGraw-Hill Book Co.

Byron (Jake) Jacobs Dies

DECATUR, ILL.—Byron (Jake) Jacobs, 47, sales manager for Tryco Manufacturing Co., Decatur, was found dead in his Buffalo, N.Y., hotel room. Mr. Jacobs was on a business trip for Tryco. His death was believed to have been caused by a heart attack.

CALENDAR FOR 1959-60

APRIL

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MECHANICAL ENGINEER

Established Agricultural Chemical Plant on Gulf Coast needs Mechanical Engineer to assist Engineer in charge of Maintenance. Five years' experience in Maintenance Engineering in Chemical or Refinery desired. Age up to 40. Salary open. Send resume to Ad No. 4767, Croplife, Minneapolis 40, Minn.

BUSINESS OPPORTUNITIES

FOR SALE—FERTILIZER PLANT, GOOD Iowa location. Granulation equipment. Sell on contract. Write P. O. Box 662, Sioux City, Iowa.

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Climax Develops New Molybdenum Fertilizer

NEW YORK—A new fertilizer additive, specially designed for treating perennial crops with the element molybdenum, has been developed by Climax Molybdenum Co., a division of American Metal Climax, Inc., according to William M. Stilwell, manager of agricultural sales and development.

Known as Moly-Gro Fertilizer Additive, the new material will be marketed primarily to commercial fertilizer producers for blending with their products. It was developed as a companion to the recently introduced Moly-Gro seed treatment formulation and is recommended for use on already established legume perennials that are growing on molybdenum responsive soil. The seed compound, on the other hand, is recommended for annuals and establishment of all new crops.

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Bradley & Baker .....
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Burgess Publishing Co. .....

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Chase Bag Co. 3
Chemagro Corp. .....
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Clover Chemical Co. .....
College Science Publishers .....
Collier Carbon & Chemical Corp. .....
Commercial Solvents Corp. 8
Consolidated Mining & Smelting Co. ....
Crown Zellerbach Corp. .....

Davison Chemical Co. .....
Deere, John, & Co. .....
Dempster Mill & Mfg. Co. .....
Diamond Alkali Co. 18
Dow Chemical Co. .....
E. I. du Pont de Nemours & Co., Inc. ...
Duval Sulphur & Potash Co. 5

Eastern States Petroleum & Chem. Corp... 21
Emulsol Chemical Corp. .....
Escambia Chemical Corporation .....

Fairfax Biological Laboratory .....
Flexo Products, Inc. .....
Food Machinery & Chemical Corp. .....
Frontier Chemical Co. .....

Gates Rubber Co. .....
Geigy Agric. Chemicals .....
Grace Chemical Co. .....
Grand River Chemical Div. of Deere & Co. 17

Hahn, Inc. .....
Hanson Equipment Co. .....
Harshaw Chemical Co. .....
Henderson Mfg. Co. .....
Hercules Powder Co. 24
Highway Equipment Co. .....
Hough, Frank G., Co. .....

Inland Chemical Corp. .....
International Minerals & Chemical Corp...

Johns-Manville Corp. .....
Jones, Robin, Phosphate Co. .....

Kalo Inoculant Co. .....
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Meyer, Wilson & Geo., & Co. .....
Mid-South Chemical Corp. .....
Miller Chem. & Fert. Corp. .....
Miller Publishing Co. .....
Mississippi River Chem. Corp. .....
Monsanto Chemical Co. 12, 13

National Distillers & Chemical Corp. ....
National Potash Co. .....
Naugatuck Chemical Div., U. S. Rubber Co.
Niagara Chemical Division .....
Northern Peat Moss .....
Northwest Nitro-Chemicals, Ltd. .....

Olin Mathieson Chemical Corp. 19

Pacific Coast Borax Co. .....
Penick, S. B., & Co. .....
Pennsalt of Washington Division, Pennsalt Chemicals Corp. 14
Phillips Chemical Co., a subsidiary of Phillips Petroleum Co. .....
Potash Company of America .....
Power Curve Conveyor .....

Raymond Bag Co. .....
Roberts Chemicals, Inc. .....

Sackett, A. J., & Sons .....
Shattuck, S. W., Chemical Co. .....
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Simonsen Mfg. Co. .....
Sinclair Chemicals, Inc. .....
Smith-Douglas Co., Inc. .....
Smith-Rowland Co., Inc. .....
Sohio Chemical Co. .....
Southern Nitrogen Co. .....
Southwest Potash Corp. 16
Spencer Chemical Co. 15
Spraying Systems Co. .....
Standard Oil Co. .....
Stepan Chemical Co. .....
Stewart-Warner Corp. .....
Successful Farming 4
Swift & Co. 11

Tennessee Corp. .....
Texas Gulf Sulphur Co. .....

Union Bag-Camp Paper Corp. 7
U. S. Borax & Chem. Corp. .....
U. S. Phosphoric Products Division .....
U. S. Industrial Chemicals Co. .....
U. S. Potash Co. .....
U. S. Rubber Co., Naugatuck Chem. Div...
U. S. Steel Corp. .....

Velsicol Chemical Corp. .....

Wisconsin Eqpt. & Distr. Co. .....
Witco Chemical Co. .....

PROMOTING BETTER INSECTICIDE USAGE

Based on years of research and field experience, charts and booklets are now available for various cotton localities outlining a planned, practical cotton insect control program. This program, using toxaphene and toxaphene-DDT, helps the farmer get the most from his insecticide dollar, increases confidence in insecticides and results in improved sales for dealers. These charts and other materials outlining the program are available for major cotton producing areas directly from Hercules.

Agricultural Chemicals Division, Naval Stores Department

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